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Research Article

The Role of TikTok Shop Influencers through "Toxic" Content in Triggering Impulse Buying among Generation Z for Fast Fashion Products

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Abstract: The rapid growth of TikTok Shop as a social commerce platform has led to the emergence of 'toxic content' produced by influencers as a marketing tactic that effectively influences Generation Z's shopping behavior. This study investigates the role of TikTok Shop influencers and their 'toxic content' in stimulating impulse buying behavior among Generation Z consumers in the fast fashion sector, focusing on the psychological mechanisms involved, the most frequently purchased product categories, and the broader impacts of these consumption patterns. A qualitative research approach with a phenomenological design was used, and data were gathered through in-depth interviews with eight informants: six Generation Z consumers aged 19–24 years and two active TikTok Shop fashion influencers, selected via purposive sampling. The data were analyzed using the interactive model of Miles, Huberman, and Saldaña (2014). Findings show that 'toxic content' acts as a stimulus within the Stimulus-Organism-Response (S-O-R) theoretical framework, triggering impulse buying within minutes by evoking positive emotions and urgency. The Fear of Missing Out (FOMO) mechanism, driven by emotional triggers like time scarcity, social proof, and exclusivity, was the most dominant psychological factor. The most commonly purchased items were tops, coordinated sets, aesthetic bottoms, locally-made footwear, and accessories. The effects of 'toxic content' are financial, psychological, social, and environmental. This study advances influencer marketing literature and provides insights into Generation Z's consumer behavior in the social commerce age.

Keywords: Generation Z; Impulse Buying; Influencer Marketing; Social Commerce; Toxic Content

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1. Introduction

The rapid development of digital technology has fundamentally transformed the marketing landscape worldwide. The era of digital transformation has driven a shift in consumer behavior from conventional shopping activities toward a continuously evolving e-commerce ecosystem. A report by We Are Social and Hootsuite (2024) noted that the number of active internet users globally has surpassed 5.35 billion users, with social media penetration reaching 62.3% of the world's total population. This condition creates enormous opportunities for businesses to leverage digital platforms as their primary marketing channels. Amid the proliferation of social media platforms, TikTok has emerged as one of the most dominant and disruptive platforms of the last decade. (Sa'adah et al., 2022) reported that TikTok has more than 1.5 billion monthly active users globally. In Indonesia alone, TikTok ranks second as the social media platform with the most users, with approximately 157.6 million users in 2024 (DataReportal, 2024). The introduction of the TikTok Shop feature, officially launched in Indonesia in 2021, has accelerated the transformation of this platform from a mere entertainment medium into a significant social commerce channel.

The social commerce phenomenon through TikTok Shop marks a new chapter in digital marketing strategy, where entertainment content and commercial transactions run simultaneously within a single integrated ecosystem. (Mulyana & Listiani, 2024) noted that TikTok Shop

recorded a transaction value of IDR 43.8 trillion within just one year of operating in Indonesia. This trend is driving more and more businesses, particularly in the fast fashion sector, to optimize the platform as their primary distribution and promotional channel. Within the TikTok Shop ecosystem, the presence of influencers plays a highly crucial role. Influencers are individuals who have the ability to influence the purchasing decisions of their audience through content published on social media (Fitri et al., 2021). Influencer marketing has now become one of the most effective marketing approaches, particularly due to its ability to organically build consumer trust through content that feels authentic and relatable. According to research by (Moudy & Winduwati, 2023) the global influencer marketing industry is projected to be worth 24 billion US dollars, a dramatic increase from 13.8 billion US dollars in 2021.

One phenomenon that has attracted significant attention in the context of TikTok Shop is the emergence of the term "toxic content" (konten racun) a colloquial term used by the TikTok user community to describe highly persuasive product promotional content capable of triggering spontaneous and unplanned purchasing urges (Wahyu & Hernawati, 2024). Toxic content typically appears in the format of product reviews, unboxings, try-on hauls, or lifestyle content attractively packaged by influencers. The characteristics of this content include aesthetically pleasing visuals, emotional narratives, the use of trending music, and emphasis on attractive price offers such as discounts and free shipping (Putri & Santoso, 2024). This toxic content phenomenon has a highly significant impact on impulse buying behavior. Impulse buying is defined as purchasing behavior that occurs suddenly, without prior planning, and is influenced by external stimuli that trigger emotional responses in consumers (Andalangi Maatuil et al., 2025). In the context of TikTok Shop, these external stimuli are often content produced by influencers and consumed by users during their daily scrolling sessions.

The consumer segment most vulnerable to this phenomenon is Generation Z individuals born between 1997 and 2012 (Nurul Adha et al., 2025). Generation Z is the first generation to grow up immersed in digital technology and social media, giving them both a high level of digital literacy and a strong tendency to be exposed to social media content for extended durations. The Indonesian Central Statistics Agency (BPS, 2023) recorded that Generation Z accounts for approximately 27.94% of Indonesia's total population, making it a highly strategic market segment for the fast fashion industry. The fast fashion industry itself is one of the sectors most aggressively leveraging the TikTok Shop ecosystem. Fast fashion refers to the business model of mass-producing clothing and accessories quickly and at affordable prices, following trends that rotate extremely rapidly (Basiroen et al., 2023). Both local and international fast fashion brands such as Erigo, Shein, and H&M actively collaborate with TikTok influencers to promote their latest collections. A McKinsey (2024) report indicated that 73% of Generation Z consumers admitted to having made a fashion purchase after watching promotional content on social media platforms.

The combination of influencer marketing strategies, addictive content formats, and Generation Z's vulnerability to impulse buying creates a complex marketing phenomenon worthy of in-depth investigation. Several previous studies have examined aspects of influencer marketing and impulse buying separately (Anggi Adhari & Rahayu Hardianti Utami, 2024; Ariani et al., 2025; Justiana Astuti et al., 2025; Sa'adah et al., 2022) however, studies that specifically explore the role of "toxic" content from TikTok Shop influencers as a mediator between digital marketing strategies and impulse buying behavior of Generation Z in fast fashion products remain very limited. Based on the foregoing, this research aims to fill this research gap by exploring in depth how TikTok Shop influencers, through "toxic" content, play a role in triggering impulse buying among Generation Z for fast fashion products. A qualitative approach was chosen to obtain rich, in-depth, and contextual understanding of the experiences, perceptions, and motivations underlying impulsive consumer behavior in the Generation Z segment.

2. Literature Review

Stimulus-Organism-Response (S-O-R)

The Stimulus-Organism-Response (S-O-R) Theory was first developed by Mehrabian and Russell in 1974 within the context of environmental psychology. This theory explains that individual behavior is the result of a three-stage process: stimuli (S) received from the external environment are processed by the organism (O) representing the individual's internal state, encompassing cognition, emotion, and perception ultimately producing a response (R) in the form of specific behavior (Mehrabian & Russell, 1974) as cited in (Fransisca & Erdiansyah, 2020). Over time, S-O-R theory has been widely adopted in the study of digital consumer behavior, particularly to explain the mechanism of impulse buying within e-commerce and social commerce ecosystems (Andriani & Hariasih, 2020). Its relevance lies in its ability to explain how external elements within a digital platform such as content

presentation, visual quality, influencer narratives, and price offers act as stimuli that trigger spontaneous purchasing responses in consumers.

Table 1. Mapping of S-O-R Theory

Element	Component	Application in This Research
Stimulus (S)	External stimuli	TikTok Shop influencer "toxic" content (visuals, narrative, music, discounts)
Organism (O)	Individual's internal state	Emotions, value perception, and engagement of Generation Z
Response (R)	Resulting behavior	Impulse buying of fast fashion products on TikTok Shop

S-O-R Theory serves as the primary foundation of this research because it is capable of systematically explaining how "toxic" content, as an external stimulus, can pass through the cognitive and emotional processes of Generation Z and ultimately produce a response in the form of unplanned purchases. Zhang et al. (2022), in their study of consumer behavior on live streaming commerce platforms, found that stimuli packaged visually and emotionally significantly increased the intensity of impulse buying, particularly among young consumer segments.

FOMO (Fear of Missing Out) and Emotional Trigger

Fear of Missing Out (FOMO) is a psychological phenomenon defined as feelings of anxiety, restlessness, or discomfort that arise in individuals when they realize that others are enjoying experiences, possessing objects, or participating in events that they themselves are not part of Kumalasari & Aditama, 2025). Conceptually, FOMO is rooted in self-determination theory, which emphasizes the importance of the need for social relatedness, competence, and autonomy in motivating individual behavior (Deci & Ryan, 2000) as cited in (Kaniati et al., 2024). In the context of social media and digital platforms, FOMO is significantly intensified. Continuous exposure to social media content creates a condition in which individuals constantly compare themselves to others including influencers who display ideal lifestyles, the latest products, and ongoing trends (Yuarti et al., 2024). Generation Z, as the generation most intensely exposed to social media, has been identified as the group most vulnerable to FOMO, where the fear of missing trends becomes one of the primary drivers of their consumer behavior (Kumalasari & Aditama, 2025).

Emotional triggers are key elements that activate the FOMO response in consumers when they are exposed to digital content. In the context of "toxic" content on TikTok Shop, emotional triggers operate through a series of mechanisms deliberately designed by influencers to create urgency and emotional pressure on their audience. Common emotional trigger mechanisms found in TikTok Shop "toxic" content include:

a. Time Urgency: The use of phrases such as "limited stock," "flash sale today only," or "discount ends in 2 hours," which provoke a fear of missing out on deals.
b. Social Pressure: The display of positive comments, the number of products sold, and testimonials from other consumers, creating the perception that "everyone has already bought it."
c. Identity and Exclusivity: Narratives that associate ownership of certain products with an identity, social status, or lifestyle that is aspirational for Generation Z.
d. Desire-Triggering Visual Aesthetics: The presentation of fast fashion products through aesthetically pleasing content that stimulates the desire to possess.

Consumer Behavior

Consumer Behavior Theory is one of the fundamental pillars of Marketing Management. Kotler dan Keller (2022) as cited in Bakrie et al. (2024) define consumer behavior as the study of how individuals, groups, and organizations select, purchase, use, and dispose of goods, services, ideas, or experiences to satisfy their needs and desires. A deep understanding of consumer behavior is a primary prerequisite for formulating effective and well-targeted marketing strategies. In the consumer behavior model developed by Kotler dan Keller (2022), there are four main factors that influence consumer purchasing decisions: (1) cultural factors, encompassing culture, subculture, and social class; (2) social factors, including reference groups, family, and social roles and status; (3) personal factors, such as age, life-cycle stage, occupation, economic circumstances, personality, and lifestyle; and (4) psychological factors, including motivation, perception, learning, and beliefs.

Impulse buying is one of the most extensively studied forms of consumer behavior in contemporary marketing literature, particularly in the context of digital shopping. Rook dan Fisher (1995) as cited in Sari & Anandari (2025) define impulse buying as the tendency of consumers to make purchases spontaneously, suddenly, and without prior planning, often driven by strong emotional urges. In the context of e-commerce and social commerce, stimuli that trigger impulse buying can include platform interface design, promotional offers, user reviews, and most relevantly today content produced by digital influencers (Adha et al., 2025). Generation Z, as a group of consumers who grew up alongside digital technology, possesses

distinctive consumer behavior characteristics. Based on the study by Sopiyan & Kusumadewi (2020) Generation Z exhibits a higher tendency to engage in impulse buying compared to previous generations, primarily due to their high intensity of social media consumption, preference for instant gratification, and heightened sensitivity to trends and aesthetically pleasing visual content. These characteristics make Generation Z an ideal target for influencer marketing strategies based on "toxic" content on TikTok Shop.

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.

4. Results and Discussion

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.

5. 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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