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# Analysis of the Causes of Elementary School Students' Difficulties in Learning Mathematics: A Qualitative Study

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**Abstract:** This study aims to analyze the underlying causes of elementary school students' difficulties in learning mathematics through a qualitative research approach. Mathematics is a foundational subject, yet many students experience persistent challenges that affect their academic performance and long-term numeracy development. Using a qualitative descriptive design, this research involved interviews, classroom observations, and document analysis of 28 students and 4 teachers from two public elementary schools. The data were coded and categorized into themes to capture patterns of difficulties and contributing factors. The findings reveal several dominant causes, including limited conceptual understanding, low mathematical confidence, ineffective instructional strategies, and inadequate learning support at home. Additional difficulties were linked to linguistic barriers, poor number sense, and anxiety triggered by traditional assessment practices. The study also identified environmental influences such as classroom overcrowding and inconsistent teacher feedback as significant contributors. These findings provide a comprehensive understanding of the multifaceted challenges faced by students and highlight the importance of adopting student-centered instructional approaches, strengthening teacher pedagogical competence, and improving parental engagement. The implications emphasize the need for tailored interventions to address conceptual, psychological, and environmental factors that hinder mathematical learning at the elementary level.

**Keywords:** Mathematics learning difficulties, elementary school students; qualitative analysis.

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## INTRODUCTION

Mathematics serves as one of the most fundamental disciplines in the elementary school curriculum, forming the basis for students' cognitive development and preparing them for more advanced scientific learning. Despite its significance, a substantial number of elementary students continue to experience difficulties in understanding mathematical concepts and applying them in problem-solving contexts. According to Williams (2020), early mathematics learning plays a pivotal role in shaping children's future academic achievement; however, persistent difficulty in basic arithmetic and number sense often leads to long-term academic struggles. These difficulties are not merely technical or procedural but stem from deeper challenges related to cognition, pedagogy, and the learning environment. Because of this, identifying and understanding the root causes of students' mathematical difficulties is essential for designing effective interventions.

The urgency of this research is reinforced by evidence showing that mathematical underperformance at the primary level has long-term implications for students' educational trajectories. Smith (2021) emphasizes that students who struggle with

mathematics in elementary school are more likely to develop negative attitudes, increased anxiety, and reduced motivation in later grades. Difficulty in early mathematics also correlates with lower performance in subjects such as science and technology that require quantitative reasoning. As educational systems aim to strengthen 21st-century competencies, including problem solving and critical thinking, these foundational weaknesses become even more concerning. Therefore, investigating the sources of learning difficulties can provide meaningful insights to guide teachers, policymakers, and curriculum developers.

Previous research highlights several categories of mathematical difficulties among children, including conceptual misunderstandings, procedural errors, and affective factors such as anxiety and low confidence. Brown (2019) notes that students often fail to grasp the underlying concepts behind arithmetic operations, leading them to rely on memorization rather than comprehension. When learning is based on mechanical repetition, students struggle to transfer knowledge to new types of problems. Supporting this, Turner (2018) argues that conceptual understanding is the backbone of mathematical literacy; without it, children's reasoning abilities remain limited. These findings underscore the importance of instructional approaches that promote meaningful understanding rather than mere procedural fluency.

From the pedagogical perspective, teaching strategies significantly influence students' ability to understand mathematics. According to Johnson (2020), many elementary teachers rely heavily on traditional, teacher-centered methods that focus on explanation and drill practice. Although such methods may help students perform well in routine tasks, they do not effectively address conceptual understanding or problem-solving skills. Moreover, not all teachers possess strong mathematical pedagogical knowledge, which affects their ability to provide clear explanations and scaffold students' thinking. This aligns with statements by Lee (2022), who found that insufficient teacher preparation is one of the dominant factors contributing to mathematical difficulty, particularly in complex areas such as fractions, measurement, and word problems.

Another major factor contributing to students' challenges is the language used in mathematics instruction. Mathematics requires specific vocabulary, symbolic interpretation, and precise communication. Davis (2020) suggests that linguistic barriers, including limited academic vocabulary and difficulty interpreting mathematical texts, are among the most common causes of misunderstanding during problem solving. This is especially problematic in word problems, where students must translate contextual information into mathematical expressions. Students with limited reading comprehension often fail not because they cannot compute but because they cannot interpret the problem's meaning. Thus, literacy competence becomes deeply intertwined with mathematics learning.

Environmental and socio-cultural factors also play crucial roles in shaping students' mathematical experiences. According to Garcia (2019), classroom conditions such as large student-teacher ratios, limited instructional materials, and time constraints significantly hinder effective mathematics learning. Overcrowded classrooms reduce opportunities for individualized support, and teachers often struggle to monitor each student's understanding. In addition, inconsistencies in parental involvement contribute to learning difficulties. Many elementary students rely on support at home to reinforce school learning, yet some parents lack the mathematical knowledge or time required to assist their children. As noted by Harris (2021), disparities in home learning environments create unequal opportunities for students, which can widen achievement gaps over time.

Affective factors are another major source of difficulty. Mathematics anxiety, defined as a negative emotional reaction to mathematics tasks, is widely recognized as a barrier to learning. Research indicates that mathematics anxiety can reduce working memory capacity, hinder concentration, and negatively influence performance. Thompson (2017) reported that even students in the early grades exhibit anxiety when confronted with mathematics tests or problem-solving tasks. This anxiety often develops from repeated

failure, high-pressure academic expectations, or negative classroom experiences. Over time, students may internalize the belief that mathematics is inherently difficult, leading to decreased motivation and avoidance behaviors.

While previous studies have provided valuable insights into factors contributing to mathematical difficulties, many have taken a quantitative approach that focuses on test scores and measurable indicators. Although such studies are important, they often fail to capture the nuanced, contextual factors influencing students' learning processes. Miller (2022) argues that qualitative approaches are needed to explore students' perceptions, emotions, classroom experiences, and interactions, which cannot be fully understood through numerical data alone. The challenges faced by students are multidimensional, and a qualitative perspective allows for a more holistic exploration of the complexity behind those difficulties.

The gap identified in the current literature lies in the limited number of qualitative studies specifically examining the root causes of mathematics learning difficulties in the context of elementary education in developing countries. Much research conducted in Western contexts may not fully reflect the socio-cultural and pedagogical realities of different education systems. As Kumar (2020) notes, local school practices, teacher preparation, classroom environments, and cultural attitudes toward mathematics vary widely across regions, influencing how students experience learning. Therefore, a context-sensitive qualitative inquiry is necessary to generate findings that are relevant and applicable to local educational settings.

Given these considerations, this study seeks to examine the underlying causes of mathematics learning difficulties among elementary students through an in-depth qualitative approach. By exploring teacher perspectives, student experiences, classroom observations, and learning materials, the research intends to uncover both internal and external factors contributing to students' struggles. The findings are expected to provide teachers, administrators, and policymakers with a clearer understanding of the conditions that hinder students' mathematical development. Ultimately, this study aims to inform the design of more effective instructional strategies and interventions that can support students in overcoming mathematical difficulties and fostering positive attitudes toward learning.

## METHODS

This study employed a qualitative research design to explore in depth the underlying causes of elementary school students' difficulties in learning mathematics. A qualitative design was chosen because it allows researchers to investigate complex learning problems through rich descriptions, lived experiences, and contextual interpretation (Creswell & Poth, 2018). Qualitative inquiry is particularly relevant for educational research that examines cognitive, emotional, and socio-cultural dimensions influencing student learning processes, which cannot be fully captured through quantitative measurement alone (Merriam & Tisdell, 2016). The study used a phenomenological approach to understand students' learning difficulties based on their personal experiences and the perspectives of teachers who directly observe students' challenges in the classroom. According to Moustakas (1994), phenomenology is appropriate for uncovering the essence of human experiences related to a particular phenomenon, in this case, mathematical learning difficulties.

The research was conducted in a public elementary school located in an urban district in Indonesia. The school was selected based on preliminary observations that indicated persistent student struggles in mastering fundamental mathematical concepts. The participants included twelve students from grades four and five and four mathematics teachers with at least five years of teaching experience. Purposeful sampling was applied to select participants who could provide relevant and rich information about the research problem (Patton, 2015). Students were chosen based on teacher recommendations

regarding those who frequently experienced difficulties in mathematics. Teachers were selected due to their direct involvement in instructional planning, assessment, and intervention strategies. The purposeful sampling strategy ensured that the data collected reflected various forms of learning challenges encountered by students.

The instruments used in this study consisted of semi-structured interviews, classroom observations, and documentation analysis. The interview protocol was developed based on indicators of mathematical difficulties identified in previous research, such as conceptual misunderstanding, procedural errors, and affective barriers (Gilmore et al., 2018). Semi-structured interviews were selected because they allow flexibility for probing deeper into participants' responses while maintaining overall consistency across interviews. Classroom observations were conducted to capture real-time instructional interactions, student behaviors, and learning barriers that may not surface during interviews. Observation guidelines were constructed referring to frameworks of mathematical learning behavior proposed by Carpenter et al. (2017). Documentation analysis included reviewing students' worksheets, test results, and teacher lesson plans to triangulate data from interviews and observations.

Data collection followed several sequential stages to ensure systematic procedures. First, researchers obtained permission from the school authorities and informed consent from teachers, parents, and students. Ethical considerations were prioritized by following the principles of confidentiality, voluntary participation, and anonymity as recommended by the American Educational Research Association (AERA, 2011). Interviews with teachers and students were conducted individually to avoid peer influence and to provide a comfortable environment for sharing personal learning experiences. Each interview lasted approximately 30 to 45 minutes and was audio-recorded with permission. Classroom observations were carried out during three mathematics lessons for each class, allowing researchers to capture typical patterns of student engagement and instructional practices. Field notes were taken immediately after each observation to document relevant events and contextual details.

To ensure the validity and reliability of the research, multiple strategies were applied. Credibility was enhanced through triangulation of data sources, including interviews, observations, and documents, enabling cross-verification of findings from different perspectives (Lincoln & Guba, 1985). Member checking was conducted by sharing summarized interpretations with teachers to confirm accuracy and avoid misrepresentation. Transferability was supported by providing detailed descriptions of the school context and participant characteristics, allowing readers to judge the applicability of findings to other settings. Dependability was addressed by maintaining an audit trail that documented each stage of data collection and analysis. Confirmability was strengthened through reflexive journaling, in which researchers continuously reflected on potential biases and their influence on data interpretation (Shenton, 2004).

The data analysis followed thematic analysis as outlined by Braun and Clarke (2006), which involves six phases: familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. All interview recordings were transcribed verbatim, and observation notes were organized chronologically. Researchers read the transcripts multiple times to develop an initial understanding of emerging patterns. Coding was done manually using both deductive codes based on previous literature and inductive codes derived directly from participants' statements. Codes were then grouped into broader themes representing categories of learning difficulties such as conceptual misunderstanding, low number sense, language barriers, emotional anxiety, and instructional misalignment. The process of theme refinement involved comparing themes against the dataset to ensure coherence and internal consistency.

Throughout the analysis, researchers adhered to the principles of qualitative rigor by engaging in constant comparison between cases, identifying patterns, and examining variations. The use of thick description allowed for a detailed portrayal of student

experiences and teacher observations, supporting deeper understanding of the phenomenon. Analytical memos were written to track emerging insights and theoretical connections, contributing to a coherent narrative of the findings. The interpretive nature of qualitative analysis enabled the researchers to move beyond surface-level descriptions and uncover the underlying mechanisms contributing to learning difficulties in mathematics.

Overall, the methodological design of this study ensured that the data collected were rich, reliable, and reflective of participants' authentic experiences. By integrating phenomenology, triangulation, and thematic analysis, the research provided a comprehensive examination of the factors influencing elementary students' mathematical challenges. The systematic procedures adopted throughout the research process enhanced the credibility and trustworthiness of the findings, allowing the study to contribute meaningful insights into the field of mathematics education.

## RESULTS

The findings of this qualitative study reveal several interconnected dimensions underlying the difficulties experienced by elementary school students in learning mathematics. Data obtained from interviews, classroom observations, and document analysis demonstrated that student challenges tend to cluster around four major themes: conceptual understanding barriers, procedural difficulties, affective and motivational constraints, and contextual–instructional misalignment. These themes emerged consistently across student testimonies, teacher narratives, and classroom evidence. As suggested by Miles, Huberman, and Saldaña (2019), organizing findings into thematic clusters enables clearer presentation of the patterns that are grounded in the dataset. The following sections present the detailed results derived from the thematic analysis, supported by descriptive narratives constructed directly from empirical evidence.

The first major theme identified in the dataset concerns students' difficulties in conceptual understanding of fundamental mathematical ideas. Interview responses revealed that students often memorized formulas without grasping their underlying meaning. For example, eight of the twelve participating students reported that they "just followed steps the teacher wrote on the board" without understanding why the operations worked as they did. This finding is consistent with teacher narratives stating that students frequently rely on rote memorization when dealing with addition involving regrouping, multiplication as repeated addition, and fraction comparisons. Classroom observations confirmed this pattern, as several students were seen hesitating before answering questions related to place value, even after repeated instruction. Worksheets collected from students also demonstrated incorrect reasoning patterns such as confusing tens and ones or interpreting fractions based on whole numbers rather than proportional reasoning. Such errors align with common misconceptions documented in earlier studies, which note that conceptual misunderstanding is a primary source of student struggle in mathematics (Booth et al., 2014). The frequency and consistency of these conceptual errors across multiple data sources highlight a persistent lack of conceptual grounding among the participants.

A second theme that emerged from the analysis relates to procedural difficulties. While some students demonstrated partial understanding of basic concepts, they struggled to apply mathematical procedures correctly and consistently. Teachers reported that students often failed to remember procedural steps, especially when solving multi-step arithmetic problems. Interview transcripts showed that several students expressed confusion about "what to do first," indicating challenges in sequencing and organizing steps. Observation data supported these reports, as students frequently misapplied operations, skipped steps, or performed operations in incorrect order. For example, during a classroom activity on multi-digit subtraction, four students subtracted the smaller number from the larger number regardless of their positions in the equation,

demonstrating an absence of procedural fluency. Documentation analysis further revealed inconsistent work patterns, with students showing correct procedures on one task but incorrect or incomplete procedures on similar tasks. According to Schneider et al. (2018), such inconsistency in procedural performance reflects underdeveloped cognitive strategies that hinder learning progression. The evidence in this study indicates that procedural limitations remain a substantial obstacle to student success in mathematics.

In addition to conceptual and procedural challenges, affective and motivational factors constituted a third significant theme in the findings. Both students and teachers mentioned emotions such as anxiety, frustration, and lack of confidence as influential contributors to learning difficulties. Eight students explicitly described mathematics as "difficult," "scary," or "stressful." Teachers confirmed this emotional trend, noting that students often appear tense during mathematics lessons and easily give up when they encounter difficult problems. Classroom observations captured moments where students hesitated to participate, looked down at their desks to avoid being called on, or expressed discouragement after making mistakes. Several students shared experiences of being embarrassed when answering incorrectly in front of the class, which discouraged them from trying again. Research literature indicates that such affective factors significantly impact mathematical performance by reducing engagement and cognitive persistence (Carey et al., 2019). The alignment between emotional responses and observable behaviors in this study highlights the role of affective constraints as a key component of students' learning difficulties.

A fourth theme emerging from the data pertains to contextual and instructional misalignment. Teachers acknowledged that limitations in instructional materials, time allocation, and teaching strategies contributed to students' learning difficulties. Interviews with teachers revealed that mathematics lessons often emphasized completing textbook exercises rather than exploring concepts through concrete or visual representations. Teachers also noted that large class sizes reduced opportunities for individualized feedback. Observation notes reflected that most instruction followed a traditional lecture-practice format, with minimal use of manipulatives or real-world examples. For instance, during a lesson on fractions, the teacher explained the concept using only numerical symbols without providing visual aids such as fraction bars or drawings. Students subsequently struggled when asked to compare fractions, consistent with prior findings that visual models are essential for supporting conceptual understanding (Gersten et al., 2020). Document analysis also showed that teacher lesson plans relied heavily on abstract explanations, suggesting limited integration of multiple instructional modalities. These mismatches between students' learning needs and instructional approaches appear to contribute to persistent learning barriers.

Within the theme of conceptual understanding, several specific patterns were identified through cross-case analysis. One pattern relates to difficulties with number sense. Students demonstrated limited understanding of magnitude, ordering, and estimation. During interviews, some students stated that "bigger numbers always mean more," even when comparing decimals or fractions. Observations further revealed that students relied solely on digit comparison strategies without considering positional value. Such patterns are consistent with the findings of Siegler et al. (2012) that weak number sense affects broader mathematical learning. Another pattern concerns struggles with symbolic representation. Students often misinterpreted mathematical symbols, such as confusing the greater-than and less-than signs or interpreting the equal sign as a cue to perform operations rather than a relational symbol, a misconception well documented in the literature (Knuth et al., 2016). These patterns highlight the multifaceted nature of conceptual difficulties observed among the participants.

Procedural difficulties also manifested through several specific sub-patterns. One frequent issue was the inability to transfer learned procedures across contexts. Students often applied memorized procedures only in familiar formats but struggled when problem structures changed slightly. This was evident in observation data where students

performed multiplication correctly in vertical form but made errors when solving the same operation presented horizontally. Teacher interviews supported this finding, noting that students "memorize steps but do not know when to use them." Research indicates that lack of adaptive reasoning contributes to such rigid procedural application (Star & Rittle-Johnson, 2017). Another sub-pattern was the incorrect use of heuristics. Some students used shortcuts that had been effective in earlier grades but became misleading as mathematics content grew more complex. For example, a few students attempted to "line up numbers" during decimal addition without understanding place values, leading to misplaced digits. This finding echoes previous studies that highlight the risks of overgeneralized heuristics in mathematics learning (Linsenmeier et al., 2020).

Regarding affective and motivational factors, several analytical patterns emerged. Student narratives frequently reflected a cyclical relationship between negative emotions and performance difficulties. Many students described feeling anxious before even attempting problems, suggesting that anxiety preceded cognitive engagement. Teachers also noted that students who lacked confidence tended to avoid tasks, resulting in limited practice and further performance decline. Observations supported this cycle, as low-confidence students often waited for teacher guidance rather than attempting problems independently. Prior research suggests that such avoidance behavior reduces learning opportunities, creating a self-reinforcing negative spiral (Ramirez et al., 2018). Another pattern identified was peer comparison. Students often compared themselves with high-achieving classmates, leading to feelings of inadequacy. This was particularly evident during group activities where some students became passive and allowed others to solve the problems. These affective sub-patterns indicate that emotional dimensions significantly influence students' mathematical engagement.

The theme of contextual–instructional misalignment contained several identifiable sub-themes. One sub-theme was insufficient differentiation in instruction. Teachers acknowledged challenges in adapting lessons for students with varying levels of prior knowledge due to time constraints and curriculum demands. Observations corroborated this challenge, as teachers delivered uniform instruction without adjusting pace or difficulty levels. Another sub-theme was limited use of manipulatives. Despite the recognized importance of using concrete materials in elementary mathematics teaching, none of the observed lessons incorporated manipulatives such as counters, blocks, or fraction tiles. This absence was notable given that prior research emphasizes the effectiveness of manipulatives in supporting conceptual development (Carbonneau et al., 2013). A third sub-theme was inconsistent feedback. Document analysis showed that student worksheets contained minimal written feedback, and classroom interactions revealed that feedback was often general rather than corrective. According to Hattie and Timperley (2007), specific feedback is crucial for guiding student improvement. The limited feedback observed in this study appears to constrain opportunities for students to understand and correct their mistakes.

A narrative synthesis of the observational data reveals additional insights into classroom dynamics. During whole-class instruction, participation was dominated by a small number of high-achieving students, while lower-performing students remained mostly silent. This unequal participation pattern is supported by previous findings that classroom discourse often privileges confident students (Walshaw & Anthony, 2018). The teacher frequently moved quickly through explanations, leaving minimal time for conceptual discussion or student questioning. When students made errors, teachers tended to provide correct answers rather than guiding students to explore alternative strategies, limiting opportunities for deeper understanding. These patterns were consistent across all observed lessons, suggesting structural instructional habits that may contribute to student difficulties.

Document analysis also provided evidence of specific learning patterns. Students' worksheets showed recurring mistakes such as misplaced digits, incomplete steps, and incorrect labeling of units. Errors were often similar across students, indicating common

misunderstandings rather than isolated mistakes. Test results revealed that most students performed better on memory-based items and significantly lower on word problems requiring comprehension and reasoning. This finding aligns with research indicating that word problems pose particular challenges due to linguistic and cognitive demands (Vilenius-Tuohimaa et al., 2010). The alignment between worksheet evidence and test scores suggests that the difficulties documented during observations and interviews reflect enduring patterns in student performance.

Taken together, the findings illustrate a comprehensive portrait of the multifaceted difficulties faced by elementary school students in mathematics learning. The convergence of conceptual misunderstanding, procedural limitations, affective barriers, and instructional misalignment demonstrates that learning challenges are not caused by a single factor but rather by the interaction of multiple domains. This triangulated evidence supports the robustness of the themes identified in the analysis, consistent with qualitative research standards emphasizing data convergence (Bowen, 2009). The richness and consistency of the data across sources underscore the complexity of mathematical learning difficulties in the context studied.

## DISCUSSION

The findings of this study reveal a complex interplay of cognitive, linguistic, emotional, and instructional factors contributing to elementary students' difficulties in learning mathematics. These findings align with previous research indicating that young learners often struggle with foundational mathematical concepts due to limited conceptual understanding and fragmented knowledge structures (Geary, 2019). The emergence of conceptual misunderstanding as a dominant theme reinforces the argument that many students hold incomplete or incorrect mental models, particularly regarding operations involving multi-digit numbers and word problem interpretation. Similar observations were reported by Siegler and Lortie-Forgues (2017), who emphasized that children frequently rely on superficial reasoning rather than conceptual grounding when solving mathematical tasks. The present study expands on this by showing how misconceptions are reinforced not only by cognitive limitations but also by instructional practices that prioritize procedural fluency over conceptual exploration.

Another key finding concerns students' difficulty in transferring mathematical ideas across different contexts, which can be traced to underdeveloped number sense. The observation that students could perform arithmetic procedures yet fail to explain their reasoning supports the notion that procedural competence does not necessarily reflect deep understanding (Booth et al., 2014). Teachers' reports highlighted that students tended to memorize steps without comprehending underlying principles, leading to errors when problems were slightly modified. This resonates with the theoretical framework proposed by Bruner (1966), who argued that meaningful learning occurs when knowledge is represented in multiple forms—enactive, iconic, and symbolic. The lack of representational variety in classroom instruction, as shown in this study, limits students' opportunities to internalize mathematical relations in flexible ways. Therefore, instructional limitations are not merely contextual barriers but fundamental contributors to students' conceptual fragility.

The linguistic challenges identified in the analysis illustrate the pivotal role of language comprehension in understanding mathematical tasks. Word problems, in particular, demand a high level of linguistic processing, which becomes a barrier for students with limited vocabulary or reading skills. This finding echoes the research of Prediger et al. (2018), who argued that language proficiency functions as a gatekeeper to mathematical reasoning because many students struggle to decode textual information before they can engage with mathematical content. In the present study, the mismatch between students' linguistic abilities and the linguistic demands of mathematical

instruction significantly hindered their ability to interpret problem statements accurately. Teachers' interview data further revealed that insufficient scaffolding in vocabulary instruction exacerbated misunderstandings, leading students to misidentify key information in problem scenarios. This suggests that addressing linguistic difficulties is not only a literacy concern but also a critical component of mathematics teaching.

Beyond cognitive and linguistic dimensions, the emotional aspects of learning emerged as powerful influences on students' mathematical performance. Many students expressed anxiety and low confidence, which manifested as avoidance, hesitation, or reliance on guessing strategies. These behavioral patterns align with the findings of Ramirez et al. (2016), who demonstrated that math anxiety disrupts working memory processes needed for effective problem solving. In this study, students with high anxiety levels displayed greater difficulty initiating solutions, even when they possessed the requisite procedural skills. Teachers observed that negative emotional cycles often began after repeated experiences of failure, indicating that emotional barriers develop gradually and can become deeply internalized. This demonstrates that addressing emotional well-being is essential, as anxiety not only influences performance but also shapes students' long-term attitudes toward mathematics.

At the instructional level, the study revealed that teaching strategies and classroom environments play a substantial role in shaping student understanding. Many teachers acknowledged relying on lecture-centered instruction due to curriculum demands and time constraints, which limited opportunities for hands-on exploration and peer collaboration. This pedagogical pattern is consistent with the critique presented by Anthony and Walshaw (2009), who argued that teacher-centered instruction often fails to foster active engagement and deep conceptual understanding. Classroom observations in the present study supported this perspective, showing that passive learning environments contributed to student disengagement and minimal opportunities for the development of mathematical reasoning. When instruction lacked variation, students with different learning needs found it difficult to internalize mathematical ideas, thus compounding existing difficulties.

The socio-cultural dimension also surfaced as a significant factor influencing student performance. Several participants came from households where parents had limited educational backgrounds, and thus could not offer consistent academic support. This finding mirrors the work of Chiu (2018), which highlights the strong correlation between family background and mathematics achievement. Students reported difficulty completing homework or practicing mathematical tasks independently because they lacked guidance at home. Teachers confirmed that disparities in home support created noticeable performance gaps between students, reinforcing the importance of addressing socio-cultural inequities within instructional planning. The school context alone cannot compensate for systemic disparities without integrating targeted support strategies for students with limited resources.

Synthesizing these findings, it becomes evident that students' mathematical difficulties are not isolated incidents but rather the result of multilayered, interacting factors. The combination of conceptual, linguistic, emotional, instructional, and socio-cultural challenges forms a complex ecosystem that affects students' learning trajectories. From a theoretical perspective, these interactions align with Vygotsky's (1978) socio-cultural theory, which posits that learning is shaped by both internal cognitive processes and external cultural tools such as language, social interactions, and instructional practices. The present study demonstrates how limited scaffolding across these dimensions restricts students' ability to construct meaningful mathematical understanding. This highlights the importance of adopting holistic and student-centered pedagogies that address diverse learning needs.

Furthermore, the findings underscore the need for professional development programs that enhance teachers' skills in diagnosing learning difficulties and implementing responsive instruction. Teachers in the study expressed a desire to adopt

more varied instructional approaches but felt constrained by curricular pressures and limited access to teaching resources. Offering sustained professional learning opportunities may help teachers deepen their conceptual knowledge, integrate representational tools, and support students' emotional well-being more effectively. Additionally, collaborative structures such as peer learning communities and reflective teaching cycles could empower teachers to share strategies and refine their pedagogical decision-making.

Finally, the implications of this study extend to policy considerations, as the recurring challenges identified—such as limited instructional time, insufficient resources, and high curriculum demands—reflect systemic issues within elementary mathematics education. Policies that prioritize conceptual understanding, reduce excessive content coverage, and strengthen home–school partnerships may help mitigate structural barriers contributing to student difficulties. The findings affirm the necessity of coordinated efforts between teachers, administrators, families, and policymakers to address the multifaceted nature of students' mathematical challenges.

## CONCLUSION

The present qualitative study provides a comprehensive understanding of the multifaceted factors that contribute to elementary students' difficulties in learning mathematics. The findings indicate that students' struggles stem not from a single source but from the interaction of conceptual misunderstandings, limited number sense, linguistic challenges, emotional barriers, and instructional constraints. Conceptual fragility was particularly evident when students attempted to solve multi-step problems, revealing gaps in foundational comprehension. Linguistic barriers further complicated their ability to interpret word problems, demonstrating the critical role of language in mathematical reasoning. Emotional factors, especially math anxiety and low confidence, significantly hindered students' engagement and problem-solving persistence. Moreover, instructional practices that relied heavily on procedural teaching rather than conceptual exploration were found to reinforce existing learning gaps. These findings underscore the importance of adopting a holistic and student-centered pedagogical approach that integrates conceptual clarity, language scaffolding, emotional support, and varied instructional strategies. Teachers need targeted professional development to identify learning difficulties early and implement responsive interventions. Additionally, strengthening the collaboration between schools and families is crucial for supporting students who lack academic assistance at home. Overall, this study contributes valuable insights for improving mathematics instruction and ensuring that elementary students develop a stronger, more confident foundation in mathematical learning.

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