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An Analysis of Students' Difficulties in Learning Mathematics at SMP Setia Probolinggo

Hotim Nurjannah[*1], Fitria Wahyuni[2], Nurul Hidayati[3], M. Yahya[4], Devy Habibi Muhammad[5]

[1] Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; hotimnurjannah@gmail.com
[2] Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; fitriawahyuni185@gmail.com
[3] Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; nurul.hidayatiprob@gmail.com
[4] Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; yahyanation695@gmail.com
[5] Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; hbbmuch@gmail.com

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Abstract

This study aims to examine the level of students learning difficulties in mathematics at SMP Setia Probolinggo. A descriptive qualitative approach was employed, with eighth-grade students in the 2025/2026 academic year as the research participants. Data were collected through classroom observations, semi-structured interviews, and document analysis, and were analysed using the interactive data analysis model proposed by Miles and Huberman. Data validity was ensured through source and methodological triangulation. The findings reveal that students encounter significant difficulties in understanding fundamental mathematical concepts, particularly in abstract topics such as algebra and geometry. Many students tend to rely on rote memorisation of formulas without conceptual understanding, which results in difficulties in solving mathematical problems, especially word problems requiring higher-order reasoning skills. Internal factors contributing to these learning difficulties include low learning motivation, limited self-confidence, and inadequate basic mathematical abilities. In contrast, external factors include the limited use of varied instructional methods and an unsupportive learning environment. These findings highlight the importance of implementing more interactive, student-centred instructional strategies to effectively address and reduce students difficulties in learning mathematics.

Kata Kunci:

Kesulitan Belajar Matematika; Pembelajaran Matematika; Siswa SMP; Faktor Internal dan Eksternal; Penelitian Kualitatif.

Abstrak

Penelitian ini bertujuan untuk mendeskripsikan tingkat kesulitan siswa dalam pembelajaran matematika di SMP Setia Probolinggo. Penelitian menggunakan pendekatan kualitatif deskriptif dengan subjek siswa kelas VIII tahun pelajaran 2025/2026. Data dikumpulkan melalui observasi, wawancara semi-terstruktur, dan dokumentasi, kemudian dianalisis menggunakan model analisis interaktif Miles dan Huberman. Keabsahan data diuji melalui triangulasi sumber dan metode. Hasil penelitian menunjukkan bahwa siswa mengalami kesulitan dalam memahami konsep dasar matematika, terutama pada materi yang bersifat abstrak seperti aljabar dan geometri. Siswa cenderung

menghafal rumus tanpa memahami konsep, sehingga mengalami kesulitan dalam menyelesaikan soal, khususnya soal cerita yang membutuhkan penalaran. Faktor internal yang memengaruhi kesulitan belajar meliputi rendahnya motivasi belajar, kurangnya kepercayaan diri, dan lemahnya kemampuan dasar matematika. Sementara itu, faktor eksternal meliputi metode pembelajaran yang kurang bervariasi serta lingkungan belajar yang kurang mendukung. Temuan ini menunjukkan perlunya strategi pembelajaran yang lebih interaktif dan berpusat pada siswa untuk mengurangi kesulitan belajar matematika.

Corresponding Author:
Hotim Nurjannah
Institut Ahmad Dahlan Probolinggo, Jawa Timur, Indonesia; hotimnurjannah@gmail.com

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INTRODUCTION

Mathematics is a fundamental subject that plays a crucial role in fostering students logical, analytical, and systematic thinking skills (Erika Setiowati et al., 2024). Despite its importance, many junior high school students continue to experience difficulties in understanding mathematical concepts. Preliminary observations conducted at SMP Setia Probolinggo, revealed that a considerable number of students showed low engagement and limited enthusiasm toward mathematics learning, particularly when dealing with abstract topics such as algebra and geometry.

Difficulties in learning mathematics constitute a persistent issue in the instructional process (Susanto, 2024). These difficulties may arise from various factors, including disparities in students' basic mathematical abilities, the use of less engaging instructional methods, and an unconducive learning environment. Differences in foundational skills often hinder students ability to comprehend abstract mathematical concepts that require higher levels of logical reasoning (Rohim & Prayogi, 2023). In addition, monotonous teaching approaches that fail to actively involve students tend to reduce learning motivation and interest. Furthermore, unsupportive learning environments, both at school and at home, may further exacerbate students' learning difficulties.

Such conditions can lead to low academic achievement, decreased self-confidence, and diminished interest in mathematics (Ary & Muaini, 2025). Therefore, it is essential for teachers and educational institutions to conduct a thorough assessment of students learning difficulties in mathematics (Safari & Nurhida, 2024). A comprehensive understanding of these difficulties enables teachers to design and implement more effective and innovative instructional strategies that align with students characteristics and learning needs. Consequently, mathematics instruction can become more meaningful and contribute to the optimal improvement of students' learning outcomes (Purwandari et al., 2024).

Previous studies have extensively examined students difficulties in learning mathematics. For instance, Klorina and Juandi (2022) reported that students learning difficulties are largely attributed to weak conceptual understanding and a lack of variation in teaching methods. Similarly, Putri et al. (2024) found that students errors in solving mathematical problems often stem from misconceptions related to formulas and problem-solving procedures. Meanwhile, Nurjannah, Wahyuni, and Sholikin (2025) demonstrated that the implementation of a contextual learning

approach can effectively reduce learning difficulties among eighth-grade junior high school students.

Most existing studies on mathematics learning difficulties have predominantly focused on identifying general causal factors, while relatively few have examined students' subjective classroom experiences in depth, particularly within the context of private secondary schools such as SMP Setia Probolinggo. Consequently, this study seeks to address this research gap by exploring the specific forms of learning difficulties experienced by students and the factors influencing them from the students own perspectives.

The novelty of this study lies in its emphasis on students lived learning experiences in a private school setting through a descriptive qualitative approach, which remains underrepresented in related research. Whereas prior studies have largely relied on quantitative analyses to explain the causes of learning difficulties, this research adopts an interpretive perspective by directly examining students experiences and perceptions in order to obtain a more nuanced understanding of the nature and sources of difficulties in learning mathematics (Hidayah et al., 2025).

From a theoretical standpoint, this study contributes to the body of literature on mathematics learning difficulties by situating empirical findings within the framework of constructivist learning theory, which posits that knowledge is actively constructed through learners experiences and interactions with their learning environment (Purwandari et al., 2024). By linking students experiential accounts to this theoretical perspective, the study provides a conceptual foundation for future research that emphasizes experience-based and learner-centred instructional strategies.

In practical terms, the findings of this study are expected to inform teachers in developing instructional approaches that are more responsive to students' needs and learning characteristics, particularly in private schools with limited educational resources (Puspita, 2024). Furthermore, the results may serve as a reference for schools in evaluating existing instructional practices and strengthening continuous efforts to improve the quality of mathematics teaching and learning.

METHOD

This study employs a descriptive qualitative research design to explore and analyse students' difficulties in learning mathematics at SMP Setia Probolinggo. The descriptive qualitative approach was chosen because it allows the researcher to gain an in-depth and comprehensive understanding of students' experiences, perceptions, and responses during the mathematics learning process. Through this approach, the study does not aim to test hypotheses or measure variables quantitatively, but rather to describe and interpret phenomena as they naturally occur in the classroom context. This design is considered appropriate for revealing the forms of learning difficulties encountered by students and the underlying factors contributing to these difficulties from their own perspectives.

The participants of this study consisted of eighth-grade students at SMP Setia Probolinggo during the 2025/2026 academic year. The research setting was selected based on preliminary observations indicating that students experienced various difficulties in understanding mathematical concepts, particularly in abstract material. Purposive sampling was applied to determine research participants, with selection criteria based on students' level of engagement in mathematics learning and their willingness to provide information relevant to the research objectives. This sampling technique enabled the researcher to obtain rich and meaningful data from participants who were considered capable of providing detailed insights into the learning difficulties they experienced.

Data collection in this study was conducted using multiple techniques, namely classroom observations, semi-structured interviews, and document analysis. Classroom observations were carried out to examine students' engagement, learning behaviour, and responses during

mathematics instruction. Semi-structured interviews were conducted to gain deeper insights into students' experiences, perceptions, and feelings related to difficulties in learning mathematics, as well as the internal and external factors influencing these difficulties. In addition, document analysis was used to support and strengthen the findings, including the examination of teachers' notes, lesson plans, and samples of students' written work, which provided concrete evidence of students' learning difficulties.

The data obtained from observations, interviews, and documentation were analysed using the interactive data analysis model proposed by Miles and Huberman. This analysis process consisted of three interrelated stages: data reduction, data display, and conclusion drawing or verification. Data reduction involved selecting, simplifying, and focusing on information that was relevant to the research objectives, while irrelevant data were eliminated. The reduced data were then presented in the form of descriptive narratives and selected excerpts from interview transcripts to facilitate interpretation. Finally, conclusions were drawn by identifying recurring patterns, themes, and relationships among the data, and these conclusions were continuously verified throughout the analysis process to ensure their consistency and accuracy.

To ensure the validity and trustworthiness of the research findings, data validity was established through source triangulation and methodological triangulation. Source triangulation was conducted by comparing data obtained from different sources, including observations, interviews, and document analysis, to identify consistency and convergence of findings. Methodological triangulation was applied by using multiple data collection techniques to examine the same phenomenon from different perspectives. Through these triangulation strategies, the credibility, reliability, and overall trustworthiness of the research findings were enhanced, thereby strengthening the conclusions drawn from the study.

RESULT AND DISCUSSION

Result

The research findings were derived from classroom observations of mathematics learning activities among eighth-grade students at SMP Setia Probolinggo, in-depth interviews with selected students, and document analysis in the form of teachers' records and samples of students' written work. Based on data analysis conducted through data reduction, data display, and conclusion drawing, several key findings emerged concerning the types of mathematics learning difficulties experienced by students.

The findings indicate that most students experienced difficulties in understanding fundamental mathematical concepts, particularly in abstract topics such as algebra and geometry. Students reported that they often memorised formulas without fully understanding their meaning or application. This was reflected in their tendency to provide incorrect answers when presented with problems that differed slightly from the examples explained by the teacher.

Classroom observations further revealed that students frequently struggled to re-explain concepts they had previously learned. Several students stated that the teacher's explanations were delivered too quickly and tended to move directly to examples without sufficient gradual reinforcement of underlying concepts. Another major difficulty identified was students' inability to solve mathematical problems, especially word problems and tasks requiring logical reasoning. Many students were unable to identify relevant information within problem statements, leading to errors in determining appropriate solution strategies. Common errors included incorrect selection of formulas, mistakes in arithmetic operations, and inconsistencies in writing solution steps.

Interview data also revealed that many students experienced anxiety and fear of making mistakes when working on mathematics problems. This fear contributed to low self-confidence and a tendency to remain passive during classroom activities. Internal factors influencing students'

learning difficulties included low interest and motivation, lack of self-confidence, and weak foundational mathematical skills. Several students expressed that they had perceived mathematics as a difficult subject from the outset, which contributed to negative attitudes toward learning.

Furthermore, differences in students' basic mathematical abilities emerged as a significant factor contributing to learning difficulties. Students with weaker foundational knowledge tended to fall behind and experienced increasing difficulty in understanding subsequent material. External factors identified included the limited use of varied instructional methods, insufficient learning media, and an unsupportive learning environment. Mathematics instruction was predominantly lecture-based and focused on routine practice problems, resulting in limited student engagement and active participation in the learning process.

In addition, the home learning environment also contributed to students' difficulties. Several students reported receiving minimal academic support at home, which limited opportunities to address and overcome the learning challenges they encountered at school.

Interviews were conducted with several eighth-grade students at Setia Probolinggo Junior High School to explore their experiences and perceptions regarding difficulties in learning mathematics. The interviews were semi-structured, allowing students to express their opinions and learning experiences more freely. Based on the interviews, most students stated that mathematics is a difficult subject, especially abstract topics like algebra and geometry. One student stated:

> "*I often get confused when learning algebra, especially when it comes to letters. Usually I just memorise the formulas, but if the problem is even slightly different from the example, I can't figure it out*." (Student A)

This statement indicates that students still have difficulty grasping basic concepts and tend to memorise formulas without understanding their meaning and usage. Another student expressed a similar sentiment, stating that the teacher's explanations sometimes felt too fast.

> "*Sometimes the explanations in class are so fast, we don't even understand and then move on to example problems. If we don't dare to ask, we end up just following our friends*". (Student B)

In addition to struggling to grasp concepts, students also experienced challenges solving story problems and problems requiring reasoning. Some students reported difficulty determining the initial steps in solving problems and frequently chose the wrong formula.

> "*When it comes to stories, I often get confused about where to start. They're long and involve a lot of numbers, so I often make miscalculations or get the formula wrong.*" (Student C)

From an affective perspective, interview results indicated that some students felt a lack of confidence and a fear of making mistakes while learning mathematics. This fear made them reluctant to ask questions or express their opinions during the learning process.

> "*I'm afraid of making a mistake when I'm asked to come to the front, because if I do something wrong, I'm embarrassed. In the end, it's better to just stay quiet*". (Student D)

Environmental factors also influence student difficulties. Some students reported that they rarely received learning support at home, so they couldn't effectively address the difficulties they experienced at school.

> "*I rarely study maths at home because there's no one to guide me. If I don't understand something at school, I'm usually just left alone*". (Student E)

Based on the interview results, it can be concluded that the mathematics learning difficulties experienced by students encompass cognitive, affective, and environmental aspects. This finding supports observations and documentation showing that students still experience obstacles in understanding concepts, solving problems, and building self-confidence in mathematics learning.

Discussion

The research results indicate that the mathematics learning difficulties of students at Setia Probolinggo Junior High School are not caused by a single factor but rather result from the interaction of internal and external factors. This finding aligns with the constructivist view, which states that students' understanding is built through learning experiences and interactions with the environment (Listiana and Fauziati 2021).

Students' difficulties in understanding mathematical concepts indicate that the learning process does not fully provide opportunities for students to construct understanding independently. Students tend to memorise formulas without understanding the concepts, as also found in research (Jafar and Aisyah 2022), which states that a poor understanding of basic concepts is the main cause of mathematics learning difficulties.

Difficulty in solving problems, especially word problems, indicates students' low reasoning and problem-solving abilities. This finding supports research (Rafiah 2020), which explains that misconceptions and inaccuracies in solution steps often arise from a lack of conceptual understanding and meaningful practice.

From an internal perspective, low student motivation and self-confidence play a significant role in exacerbating mathematics learning difficulties. Negative attitudes toward mathematics make students reluctant to try and easily give up when faced with problems they consider difficult. This aligns with research (Wafa and Darmawan 2025), which states that learning interest significantly influences success in mathematics learning.

Meanwhile, external factors such as monotonous learning methods and a lack of active student engagement contribute to the learning difficulties experienced by students. Teacher-centred learning results in fewer opportunities for discussion, questioning, and in-depth exploration of concepts. Therefore, the implementation of more varied and contextual learning methods is necessary so that students can connect mathematical concepts to their real-life experiences, as suggested by Fatimah and Muthmainnah (2020).

Overall, the results of this study emphasise the importance of the teacher's role in creating a conducive, interactive, and student-centred learning environment. By understanding the forms and sources of students' mathematics learning difficulties, teachers are expected to be able to design more effective and meaningful learning strategies.

CONCLUSION

Based on research findings on the level of student difficulties in learning mathematics at SMP Setia in Probolinggo, it can be concluded that eighth-grade students still experience various difficulties in learning mathematics, influenced by both internal and external factors. The main difficulties experienced by students include a poor understanding of basic mathematical concepts, especially in abstract material, and a limited ability to solve problems requiring reasoning and problem solving.

Internally, student learning difficulties are influenced by low learning motivation, lack of self-confidence, and weak basic mathematical skills. Meanwhile, external factors that influence student learning difficulties include a lack of varied learning methods, limited learning media, and an unsupportive home learning environment.

Thus, the level of student difficulties in learning mathematics demonstrates the need for special attention from teachers and schools to implement more interactive, contextual, and student-centred learning strategies to help reduce learning difficulties and continuously improve the quality of mathematics learning.

BIBLIOGRAPHY

Ary, Firmansyah, and Muaini. 2025. "Analisis Faktor-Faktor Yang Mempengaruhi Rendahnya Minat Belajar Siswa Pada Mata Pelajaran Matematika Di Kelas VI SD Negeri Aik Berik Kabupaten Lombok Tengah Tahun Ajaran 2024/2025." *Jurnal Pendidikan, Sains, Geologi, dan Geofisika* 6(2): 1008–13.

Erika Setiowati, Syamsul Hadi, Maria Ulfa, Ahmad Dainuri, Fajar Sholeh, Miftahus Surur, and Zainul Munawwir. 2024. "Analisis Kemampuan Literasi Matematika Dalam Meningkatkan Kemampuan Berpikir Kritis Siswa." *Jurnal Kajian Penelitian Pendidikan dan Kebudayaan* 2(2): 55–68. doi:10.59031/jkppk.v2i2.321.

Fatimah, R, and F Muthmainnah. 2020. "Pendekatan Inovatif Dalam Pembelajaran Matematika Di Era Digital." 1(1): 20–29.

Hidayah, Mey Wahyu Nur Hidayah, Nabila Jasmine, Naura Aisya Magfiradina, Maharani Putri Nurkinasih, Ovinaya Shebil Kuncoro, and Nasywa Aulia Syandana. 2025. "Analisis Faktor-Faktor Yang Memengaruhi Kesulitan Dalam Belajar." *Ainara Journal (Jurnal Penelitian dan PKM Bidang Ilmu Pendidikan)* 6(1): 129–36.

Jafar, Muslim, and Devy Aisyah. 2022. "Muslim Jafar 1 , Devy Aisyah 2 , Amrina 3." 2338(September): 13–34.

Klorina, Meicindy Jeny, and Dadang Juandi. 2022. "Kesulitan Belajar Matematika Ditinjau Dari Self-Efficacy Systematic Literature Review (SLR)." *Symmetry: Pasundan Journal of Research in Mathematics Learning and Education* 7(2): 181–92.

Listiana, Dewi, and Endang Fauziati. 2021. "Pembelajaran Tematik Di Sekolah Dasar Dalam Pandangan Kontruktivisme Vygotsky." *Jurnal Jpapeda* 3(2): 163–74.

Nurjannah, Hotim, Fitria Wahyuni, and Nur Wiji Sholikin. 2025. "Penerapan Metode Pembelajaran Kontekstual Untuk Meningkatkan Keterampilan Pemecahan Masalah Siswa Pada Materi Pecahan SMP Kelas VIII." *Galaxy: Jurnal Pendidikan MIPA dan Teknologi* 2(1): 74–80.

Purwandari, Wahyu, Ika Nur Safitri, and Maulidiya Mutiara Karimah. 2024. "Eksplorasi Hakekat Pembelajaran Matematika di Madrasah Ibtidaiyah Dalam Konteks Kurikulum Merdeka." *Indonesian Research Journal on Education* 4(4): 1045–60.

Puspita, Wedya. 2024. "Kolaborasi Antara Guru Dan Teknologi Dalam Pendidikan." *Transformasi Pembelajaran Anak Usia Dini Di Zaman Digital*: 161.

Putri, Jihan Hidayah, Dian Fatma Diva, Nabila Faiza Dalimunthe, Melani Prasiska, and Abdul Razaky Irani. 2024. "Miskonsepsi Dalam Pembelajaran Matematika: Sebuah Tinjauan Literatur Terhadap Penelitian-Penelitian Terbaru." *JagoMIPA: Jurnal Pendidikan Matematika dan IPA* 4(3): 580–89.

Rafiah, Hajjah. 2020. "Kesulitan Siswa Sekolah Dasar Dalam Memahami Konsep Matematika." *Jurnal Pgsd Stkip Pgri Banjarmasin* 2: 335–43.

Rohim, Abdur, and Budi Teguh Prayogi. 2023. "Analisis Kesulitan Siswa Dalam Menyelesaikan Soal Aljabar Ditinjau Dari Kemampuan Berpikir Logis." *Inspiramatika* 9(1): 65–75. doi:10.52166/inspiramatika.v9i1.4446.

Safari, Yusuf, and Pina Nurhida. 2024. "Pentingnya Pemahaman Konsep Dasar Matematika Dalam Pembelajaran Matematika." *Karimah Tauhid* 3(9): 9817–24.

Susanto, Rachmat Eko. 2024. "J I I M Jurnal Ilmiah Ipa Dan Matematika." *Jurnal Ilmiah Ipa Dan Matematika* 3(2): 106–12.