THE LEARNING BARRIERS IN MATHEMATICS: STUDENTS' ACADEMIC PERFORMANCE AND EXPERIENCES

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The Learning Barriers in Mathematics: Students' Academic Performance and Experiences

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Abstract. Learning barriers in mathematics remain a significant concern in secondary education, as they may influence students' engagement, learning experiences, and academic outcomes. This study examined the common learning barriers in mathematics and their relationship to the academic performance of Junior High School students at Buenavista Integrated School during the School Year 2025–2026. Specifically, the research investigated cognitive, affective, and environmental barriers and explored students' learning experiences in mathematics. A mixed-methods explanatory sequential design was employed, integrating quantitative and qualitative approaches. Quantitative data were collected from 119 Junior High School students using a structured survey questionnaire, while qualitative insights were obtained from interviews with selected participants. Descriptive statistics (mean and standard deviation) and Pearson correlation analysis were used to analyze the quantitative data. The findings revealed that students moderately experienced learning barriers across cognitive (M = 2.90), affective (M = 2.91), and environmental (M = 2.91) dimensions. Students' academic performance in mathematics was rated satisfactory, with a mean grade of 83.45 (SD = 4.57). However, correlation analysis indicated no statistically significant relationship between learning barriers and students' mathematics performance ($r = -0.045$, $p = 0.626$), suggesting that other factors may influence academic achievement. Qualitative findings further revealed that students struggled with complex mathematical concepts, relied heavily on teacher explanations and examples, experienced varying levels of home learning support, and reported anxiety during mathematics assessments. The study highlights the importance of addressing cognitive, emotional, and environmental factors in mathematics instruction. Strengthening instructional clarity, providing sufficient practice opportunities, and fostering supportive classroom and home learning environments may help improve students' engagement and learning experiences in mathematics.

Keywords: academic performance, affective barriers, cognitive barriers, environmental barriers, mathematics learning, learning barriers.

Introduction

Mathematics played a vital role in developing students' logical thinking, problem-solving, and reasoning skills. However, many learners continued to struggle due to learning barriers that affected their understanding and performance. These barriers include cognitive factors such as poor comprehension and lack of prior knowledge, affective factors like math anxiety and low self-confidence, and environmental challenges such as limited resources and ineffective teaching strategies (Rahman et al., 2021). When these barriers remained unresolved, students often lose motivation and interest, resulting in poor academic outcomes (Kiswoyowati, 2018).

Academic performance and experiences in mathematics were closely tied to these barriers. Performance reflected how well students understood and applied mathematical concepts, while experiences revealed their feelings, attitudes, and perceptions toward learning (Boholano, 2017). Negative experiences such as fear of failure, embarrassment in class, or pressure to perform can led to low participation and achievement, whereas positive experiences promoted confidence and motivation (Zakaria & Nordin, 2008).

There is a strong relationship between learning barriers and Academic performance and experiences. When learning barriers were high, performance and motivation tended to decrease. Conversely, when barriers were reduced through effective teaching strategies and emotional support, students' engagement and achievement improve (Mutodi & Ngirande, 2014). To understand this connection, the study employed a mixed methods approach, combining quantitative analysis of student`s academic' performance with qualitative exploration of their learning experiences (Cresswell & Plano Clark, 2018).

Although many studies have examined mathematics difficulties, few have integrated both numerical performance data and students' personal experiences particularly in the context of Junior High School learners at Buenavista Integrated School. This gap in the literature was addressed by the present study, which analyzed not only student`s academic performance but also their experiences in learning mathematics.

The main goal of this research was to determine the learning barriers affecting student`s academic performance and experiences in mathematics at Buenavista Integrated School. Specifically, the study aimed to identify the types and extent of learning barriers, asses their impact on student`s academic outcomes, and explore their lived experiences in learning mathematics. The findings of this study were intended to help educators understand student`s real struggles and contribute to the development of more engaging, inclusive, and effective teaching practices.

Research Questions

This study aimed to determine the learning barriers in mathematics that affected the academic performance and learning experiences of Junior High School students in Buenavista Integrated School.

Specifically, it sought to answer the following questions:

1. What were the common learning barriers in mathematics experienced by Junior High School students in terms of;
   1.1 Cognitive Barriers
   1.2 Affective Barriers
   1.3 Environmental Barriers
2. What is the level of students' s academic performance in mathematics based on their First Quarter mathematics grade?
3. What are the students' personal experience in learning mathematics?
4. Is there a significant relationship between the common learning barriers and students' academic performance in mathematics?

Scope and Delimitation of the Study

This research focused on determining and analyzing the learning barriers in mathematics among junior high school students of Buenavista Integrated School during the School Year 2025-2026. The study utilized a mixed methods approach, which included quantitative data gathered through survey questionnaire and qualitative data obtained from interviews. The study was limited to the examination of cognitive, effective, and environmental learning barriers and their relationship to students' academic performance and learning experience in mathematics.

Literature Review

Learning Barriers

A study by Schunk and Zimmerman (2019) found that cognitive barriers such as low self-regulation, Cognitive barriers remain a significant challenge for many students. Research consistently shows that limited prior knowledge, weak comprehension, poor study habits, and low self-regulation reduce students' ability to understand and apply new concepts (Schunk & Zimmerman, 2019; Muega, 2017; Keskin & Yurdugul, 2020; Baysa & Dizon, 2018). Students who struggle to organize information, monitor their learning, or process complex lessons often perform lower academically. Emotional and psychological barriers also strongly affect learning. Studies reveal that anxiety, low motivation, fear of failure, and a weak sense of belonging lead to reduced engagement, avoidance of difficult tasks, and lower academic performance (Kahu & Nelson, 2018; Dela Pena & Panganiban, 2018; Putwain & Daly, 2013; Cabanilla & Buenviaje, 2020). Emotional well-being is shown to be closely tied to persistence and effective learning. Environmental barriers further contribute to learning difficulties. International and local research demonstrates that poor classroom conditions, overcrowded spaces, noise, insufficient learning materials, and unstable home environments disrupt

concentration and hinder academic development (Barrette et al., 2017; Torres & Espinosa, 2019; Howard et al., 2012; Delos Reyes & Caballes, 2021). These environmental factors often limit students' opportunities for meaningful learning. Overall, the literature shows that cognitive, emotional, and environmental factors collectively shape students' academic outcomes, underscoring the need for supportive learning environments and targeted interventions.

Cognitive Barriers

Research consistently shows that cognitive factors strongly influence students' performance in mathematics. Studies by Swanson and Zheng, Passolunghi and Mammarella, and Raghubar, Barnes, and Hecht found that working memory, executive functioning, attention, and information processing are key to solving mathematical problems, and deficits in these areas often lead to difficulties and frustration. In the Philippines, Santos and Ramos reported that math anxiety and gaps in prior knowledge significantly hinder students' engagement and understanding of advanced concepts. International research, including studies by Ferreira, Rodriguez, Guzman, Sepulveda, and Peake, Shimizu, and Li, further highlights the importance of vocabulary, self-efficacy, reasoning skills, and effective problem-solving strategies in mathematical achievement. Local studies by Esguerra, Labadan, and Comon, Reyes, and Lagud et al. also emphasize that weak foundational skills, low metacognitive awareness, and limited curiosity act as barriers to learning. Overall, these findings show that strengthening cognitive skills and addressing emotional factors are essential to improving students' success in mathematics.

Affective Barriers

Research shows that emotional and psychological factors significantly affect students' performance in mathematics. Katz and Assor and Zeidner found that anxiety, fear of failure, and other negative emotions reduce motivation and academic achievement. Similarly, Hembree concluded through a meta-analysis that high test anxiety negatively impacts mathematics performance, highlighting the need for supportive learning environments. In the Philippines, Delos Reyes reported that higher motivation and self-esteem are linked to better mathematics outcomes, while Tan and Gonzales emphasized that positive attitudes and a supportive classroom climate improve student engagement and achievement. Studies by Ramirez et al. and Ferreira et al. further revealed that math anxiety interferes with motivation, concentration, and even cognitive processing during problem-solving. Likewise, Shimizu highlighted the role of engagement and self-confidence in reducing anxiety. Local research by Estonanto, Salem, and Abuzo confirms that math anxiety, low motivation, and negative attitudes hinder students' confidence and performance. Overall, these studies demonstrate that addressing emotional barriers and fostering supportive classroom environments are essential for improving students' success in mathematics.

Environmental Barriers

Research shows that the learning environment plays a vital role in students' mathematics achievement. Eccles and Wigfield emphasized that supportive and resource-rich school environments increase student motivation and engagement, while unsupportive settings lead to disengagement and lower performance. Boaler highlighted the benefits of collaborative classrooms, noting that peer interaction strengthens understanding and confidence in mathematics. Finn and Rock found that socioeconomic status and limited access to resources create barriers to learning, calling for equitable educational support. In the Philippines, Delos Reyes reported that active parental involvement improves students' mathematics performance, while Tan showed that positive peer relationships enhance learning experiences. Martinez stressed that inadequate school resources hinder achievement. International studies, including Guo and Liao and Shimizu, further found that supportive instruction, sufficient learning opportunities, and positive classroom climates improve both motivation and problem-solving skills. Similarly, Silver and Libertus noted that home learning conditions and family support significantly influence mathematics performance. Local studies by Sabanal, Bago, Balandra, and Miranda, Esguerra et al., and Borromeo et al. confirm that limited resources, poor facilities, weak parental support, and unfavorable classroom conditions negatively affect students' engagement and achievement. Overall, these findings highlight that creating supportive, well-resourced, and inclusive learning environments is essential for improving students' success in mathematics.

Academic Performance

Research shows that academic performance is influenced by cognitive ability, motivation, personality, study habits, and the learning environment. Deary et al. found that reasoning, memory, and problem-solving skills strongly predict students' achievement across subjects. Similarly, Chamorro-Premuzic and Furnham confirmed that cognitive ability is a major predictor of success, while personality traits such as conscientiousness also contribute significantly. Pintrich and De Groot and Richardson, Abraham, and Bond emphasized that motivation, self-efficacy, and effective learning strategies are essential factors in academic achievement, while Tella further highlighted motivation as a key determinant of students' effort and persistence. Studies on the learning environment by Fraser and Delos Santos showed that supportive, organized, and well-managed classrooms enhance engagement and performance. In the Philippine context, Bansil and Laguda and Banaag found that strong study habits, such as time management and regular review,

improve grades, while Bernardo and Gonzales highlighted the importance of intrinsic motivation. Cabrera and Javier reported that socioeconomic status affects achievement due to differences in resources and parental support, and Rosario emphasized that positive classroom management and peer interaction lead to better academic outcomes. Overall, these studies demonstrate that academic success results from the combined influence of intellectual abilities, motivation, personal traits, study behaviors, and supportive learning environments.

Students' Experiences in Learning Mathematics

Research shows that students' experiences in mathematics are strongly shaped by teaching methods, emotions, motivation, and classroom environment. Boaler found that traditional, high-pressure classrooms often create fear and low confidence, while collaborative and growth-oriented approaches lead to more positive experiences and better performance. Similarly, Zan and Di Martino and Martinez-Sierra and Garcia-Gonzales reported that repeated failure, rigid instruction, and lack of teacher support foster anxiety and frustration, whereas supportive environments promote positive attitudes and motivation. Lui and Wang and Hannula emphasized that intrinsic motivation, self-beliefs, and a sense of autonomy contribute to stronger engagement and more meaningful learning experiences. Studies by Jackson and Reyes and Castillo further showed that interactive strategies, real-life applications, and collaborative problem-solving enhance students' confidence and enjoyment, while purely lecture-based instruction leads to disengagement. In the Philippine context, Bautista, Delos Santos, Serrano and Caballero, and Delos Santos found that fast-paced lessons, fear of mistakes, and low motivation contribute to anxiety and negative experiences, whereas supportive teachers and contextualized, interactive approaches foster confidence and active participation. Overall, these studies highlight that students' mathematical experiences improve when classrooms promote emotional support, meaningful engagement, and learner-centered instruction.

Methodology

Research Design

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to gain a comprehensive understanding of the learning barriers faced by students in mathematics. Mixed-methods research allowed for the triangulation of data, providing a more complete picture of complex phenomena (Creswell & Plano Clark, 2018). By combining numerical data with detailed qualitative insights, this design effectively captured the nuances of students' experiences and perceptions regarding their performance in mathematics. The qualitative phase utilized a survey questionnaire to quantify the prevalence and impact of cognitive, affective, and environmental barriers. The qualitative phase will include interviews to explore students' personal experiences in greater depth. This study followed an explanatory sequential design, which involved collecting quantitative data fist, followed by quantitative data further explain and elaborate on the quantitative findings (Creswell, 2014).

Sampling Design

The study will utilize a stratified random sampling method for the quantitative phase. Stratified sampling involved dividing the student population into subgroups (strata) based on grade level and gender, and then randomly selecting participants from each subgroup (Creswell, 2014). This method ensured adequate representation of each grade level and enhanced the generalizability of the findings. For the qualitative phase, purposive sampling was employed. Participants were selected based on specific criteria derived from their survey responses, particularly those who reported experiencing various learning barriers. This approach allowed for a more in-depth exploration of the specific challenges encountered by students in learning mathematics.

Research Locale

This research was conducted at Buenavista Integrated School during the academic year 2025-2026. This school public educational institution that serves a diverse population of learners, making it an appropriate setting for examining learning in mathematics. Buenavista Integrated School is committed to providing equitable educational opportunities and fostering an exclusive learning environment. This commitment was essential in addressing the academic challenges commonly experienced by students in mathematics (Wang et, al., 2016).

Research Participants

This study presents the total population of (601) Junior High School learners from Grade 7 to 10 at Buenavista Integrated School. The largest population consisted of Grade 7 learners (221), while the smallest population consisted of grade 10 learners (108). A total of 119 respondents were selected, representing 20% of the total population. For Qualitative study, a total of 8 respondents were selected, 2 students for each grade level.

Research Instrument

This study was only selected by grade levels from Grades 7 to 10 of Buenavista Integrated School. The total population of student-respondents was 601 from Grades 7 to 10. The largest population consisted of Grade 7 learners (221), while the smallest population consisted of Grade 10 learners (108). Since the participants we're only selected, the total sample size was 119 for Quantitative and a total of 8 for Qualitative study.

Data Gathering Procedure

Prior of data collection, ethical approval was secured from the school principal of Buenavista Integrated School. This step ensured that the research adhered to ethical standards and safeguarded the rights and well-being of all participants (Creswell, 2014). Participants were provided comprehensive information regarding the purpose of the study, the voluntary nature of their participation, and the measures taken to protect their anonymity. These assurances helped establish trust and encouraged honest and open responses. After ethical clearance was obtained, the researchers prepared the data collection instruments, including a structured survey questionnaire and semi-structured interview guide. Both instruments were developed based on relevant literature and expert feedback. A pilot test was be conducted with a small group of students to refine the instruments for clarity and relevance (Fowler, 2014). Following the finalization of the instruments, the quantitative survey was administered to the selected respondents during regular class periods to ensure a comfortable environment for participation. This phase focused on identifying the cognitive, affective, and environment barriers affecting students' mathematics learning. After the completion of the survey phase, quantitative data collection was conducted, from 15-20 selected students representing diverse experiences selected to participate in in-depth interviews and focus group discussions. these sessions allowed students to freely express their thoughts and feeling regarding the barriers they faced in learning mathematics (Patton, 2015). All discussions were conducted in a supportive atmosphere and were audio recorded with the participants' consent for accurate transcription and analysis.

Results and Discussions

Problem 1: What are the common learning barriers in mathematics experienced by Junior High School students in terms of; Cognitive Barriers, Affective Barriers, Environmental Barriers?

Table 1: Students Experiences in Learning Mathematics in terms of Cognitive Barriers

	Statements *The student…*	Mean	Verbal Description	Interpretation
1.	I understand the steps needed to solve most math problems we do in class.	3.08	.53	Agree
2.	I find it difficult to follow explanations when the teacher moves quickly through a lesson.	2.97	.66	Agree
3.	I can remember formulas or procedures long enough to use them inn exercise.	2.86	.66	Agree
4.	I feel confident breaking a difficult math problem into smaller parts to solve it.	3.00	.71	Agree
5.	I need more examples or practice problems to fully understand new math topics.	3.20	.65	Agree
6.	I often fail to understand the lesson because the concepts are too difficult for me.	2.70	.81	Agree
7.	I cannot focus during mathematics class, which makes it harder for me to learn.	2.50	.82	Agree
	Over-all Mean	**2.90**	**0.69**	**Disagree**

Table 1 presents the students experiences in learning mathematics in terms of cognitive barriers, as measured by their level of agreement with the given statements. The table shows the mean scores, standard deviations, verbal descriptions, and interpretations of the responses. The results indicate that respondents obtained the highest mean of 3.20 on the statement "I need more examples or practice problems to fully understand new math topics", followed by the mean of 3.08 on the statement of "I understand the steps needed to solve most math problems we do in class", with a verbal description of "agree" and interpreted as "Moderately Experienced". This means that students can follow math lessons. to some extent, but they still need more practice and examples to improve their understanding and performance. This implies that while students are capable of understanding mathematical procedures, they still encounter challenges related to lesson pacing, memory retention, and conceptual difficulty. According to Sweller (1988), excessive cognitive load can hinder students' ability to process and retain mathematical information, especially when lessons are fast-paced. The highest mean score (3.20) was observed in the statement regarding the need for more examples and practice. This finding supports the claim of Kilpatrick, Swafford, and Findell (2001), who

emphasized that mathematical understanding improves when learners are given sufficient opportunities for guided practice and application. Similarly, Polya (1957) highlighted the repeated problem-solving experiences help learners develop stronger reasoning skills. Meanwhile, the lowest mean obtained is 2.50 on the statement "I cannot focus during mathematics class, which makes it harder for me to learn", with a verbal description of "Agree" and interpreted as "Moderately Experienced" was recorded for students' ability to focus during mathematics class. This means that students admit that lack of focus affects their learning in math, but it is less experienced than other difficulties, such as understanding lessons or needing more practice. This implies that attention and concentration are moderate concerns that may affect learning outcomes. Hattie (2009) noted that students' engagement and clarity of instruction play a crucial role in improving academic performance, particularly in mathematics. Overall, the findings imply that improving instructional strategies such as slowing down lesson delivery, providing clearer explanations, and increasing practice activities may help reduce cognitive barriers and enhance students' learning experiences in mathematics.

Table 2: Students Experiences in Learning Mathematics in terms of Affective Barriers

	Statements ***The student…***	**Mean**	**Verbal Description**	**Interpretation**
1.	I feel nervous and worried before I take a math test.	2.91	.74	Agree
2.	I cannot focus during mathematics class, which makes it harder for me to learn.	3.36	.64	Strongly Agree
3.	When I get a math problem wrong, I feel discourage and avoid trying similar problems.	2.72	.76	Agree
4.	I enjoy solving math problems when I can see how they apply to everyday life.	3.08	.70	Agree
5.	I feel comfortable asking the teacher questions when I do not understand.	3.15	.70	Agree
6.	I lose motivation to study when I feel anxious about the subjects.	2.67	.80	Agree
7.	I often avoid participating in class because I lack confidence in my abilities.	2.49	.80	Disagree
	Over-all Mean	**2.91**	**0.73**	**Disagree**

Table 2 presents the students' experiences in learning mathematics in terms of affective barriers. This includes students' emotions, motivation, confidence, and attitudes towards mathematics. The highest mean obtained is 3.36 on the statement "I cannot focus during mathematics class, which makes it harder for me to learn", with a verbal description of "Strongly Agree" and interpreted as "Highly Experienced", followed by second highest mean of 3.15 on the statement "I feel comfortable asking the teacher questions when I do not understand", with a verbal description of "Agree" and interpreted as "Moderately Experienced". This means students struggle more with maintaining focus in mathematics class than in communicating or asking questions to their teacher. This implies that emotional factors such as anxiety, motivation, and confidence influence students' engagement and performance in mathematics. According to Tobias (1993), math anxiety can negatively affect students' confidence and willingness to participate in mathematical tasks. The highest mean score (3.36) was observed in students' motivation to improve in mathematics, indicating a strong willingness to study independently and perform better. This finding aligns with the study of Bandura (1997), which emphasized that self-motivation and self-efficacy play crucial roles in academic success. Meanwhile, the lowest mean obtained is 2.49 on the statement "I often avoid participating in class because I lack confidence in my abilities", with a verbal description of "Disagree" and interpreted as "Fairly Experienced". This means that most students do not usually avoid participating in class due to lack of confidence. This implies that most students do not frequently avoid participating in class because of low confidence. The students' enjoyment of mathematics increased when lessons were connected to real-life situations, supporting the findings of Hattie (2009), who stated that meaningful and relevant instruction enhances students' engagement. Although some students experience discouragement and anxiety, the results imply that positive emotional support and encouraging classroom environments may help reduce affective barriers and improve learning outcomes.

Table 3: **Students Experiences in Learning Mathematics in terms of Environmental Barriers**

	Statements ***The student…***	**Mean**	**Verbal Description**	**Interpretation**
1.	The examples and activities my teacher use help me understand math topics.	3.30	.67	Strongly Agree
2.	I have enough materials (Textbook, Worksheet, Calculator) to practice math at home.	2.94	.76	Agree
3.	I often get interrupted or have distractions when I study math at home.	2.83	.74	Agree
4.	The classroom is organized in a way that helps me focus during math lesson.	2.94	.76	Agree
5.	Group activities in math class help me learn better than only listening to the teacher.	2.92	.69	Agree

6.	I find it hard to concentrate because my learning environment is noisy or distracting.	2.85	.76	Agree
7.	I struggle to learn well when the classroom lacks proper facilities or resources.	2.85	.75	Agree
	Over-all Mean	**2.91**	**0.73**	**Disagree**

Table 3 presents the students' experiences in learning mathematics in terms of environmental barriers. These include the availability of learning materials, classroom organization, learning environment at home and school, and instructional strategies used by teachers. The highest mean obtained is 3.30 on the statement of "The examples and activities my teacher use helps me understand math topics", with verbal description of "Strongly Agree" and interpreted as "Highly Experienced", followed by the second highest mean 2.94 on the statement "The classroom is organized in a way that helps me focus during math lesson" and "I have enough materials (Textbook, Worksheet, Calculator) to practice math at home", with a verbal description of "Agree" and interpreted as "Moderately Experienced". This means students most from clear examples provided by the teacher, while classrooms setup and access to materials are helpful but can still be improved. This implies that while the learning environment generally supports students, certain environmental factors still pose challenges. The highest mean (3.30) was recorded for the use of examples and activities by teachers, indicating that instructional strategies significantly aid students' understanding. This finding supports Bruner's (1966) theory, which emphasizes active learning and the use of concrete examples to improve comprehension. Meanwhile, the lowest mean score obtained is 2.83 on the statement "I often get interrupted or have distractions when I study math at home", with a verbal description of "Agree" and interpreted as "Moderately Experienced". This means that students generally agree that they experience interruptions or distractions when studying math at home. This implies that homme distractions are a noticeable learning barrier for students. While not extremely severe, these distractions can still affect concentration and math performance, suggesting a need for a more supportive or quieter study environment at home. Moderate mean scores were observed in indicators related to classroom organization, availability of learning materials, and group activities. According to Fraser (2012), a well-structured classroom environment and adequate learning resources contribute positively to students' academic performance. However, distractions at home and noisy environments were found to moderately affect students' concentration, consistent with the findings of OECD (2013), which highlighted the impact of learning environments on student achievement. Overall, the results imply that maintaining an organized classroom, providing sufficient learning materials, and minimizing environmental distractions can further enhance students' learning experiences in mathematics.

Table 4: **Summary of the Students Experiences in Learning Mathematics in terms of Cognitive Barriers, Affective Barriers, and Environmental Barriers**

	Statements ***The student…***	**Mean**	**Verbal Description**	**Interpretation**
1.	Cognitive Barriers	2.90	0.69	Moderately Experienced
2.	Affective Barriers	2.91	0.73	Moderately Experienced
3.	Environmental Barriers	2.32	2.94	Fairly Experienced
	Over-all Mean	**2.71**	**1.45**	**Moderately Experienced**

Table 4 presents the overall summary of students' experiences in learning mathematics based on three major dimensions: cognitive barriers, affective barriers, and environmental barriers. The results are summarized using the mean, standard deviation, and interpretation. The overall mean of 2.71 indicates that students moderately experience barriers in learning mathematics. Among the three dimensions, affective barriers obtained the highest mean (2.91), followed closely by cognitive barriers (2.90). This means that students feelings and attitude toward math affect them slightly more than their thinking or understanding difficulty. This implies that students' emotions, motivation, confidence, and mental processing significantly influence their learning experiences in mathematics. According to Tobias (1993), affective factors such as anxiety and fear of failure can negatively affect students' engagement and performance in mathematics. Environmental barriers recorded the lowest mean (2.32), interpreted as fairly experienced, indicating that while the learning environment generally supports students, issues such as noise, distractions, and limited resources still affect learning. This means that environmental barriers have the lowest mean, which shows that students do not experience problem with their learning environment very often. Most students feel that their surroundings generally support their learning. This implies that although these barriers are less common, factors like noise, distractions, or lack of resources still affect some students, so improving the learning environment can further help enhance student's academic performance. This finding is consistent with the study of Fraser (2012), who emphasized that classroom environment and learning resources play a vital role in academic achievement. Overall, the results support the claim of Hattie (2009) that effective

learning in mathematics is influenced by a combination of cognitive processes, emotional factors, and environmental conditions. These findings imply that addressing students' emotional needs, improving instructional strategies, and maintaining a supportive learning environment may help reduce barriers and enhance mathematics learning.

Problem 2: What is the level of academic performance of students in mathematics based on their First Quarter math grade?

Table 5: The level of academic performance of students in mathematics during the school year 2025-2026

Indicator	Mean	Standard Deviation	Verbal Description
General Weighted Average (GWA)	83.45	4.57	Satisfactory

Table 5 presents the level of academic performance of students in Mathematics during the School Year 2025–2026. The data reveal a mean score of 83.45 with a standard deviation of 4.57, which is verbally interpreted as "Satisfactory" based on the Department of Education grading scale. This indicates that, on average, students demonstrated an acceptable level of understanding and performance in Mathematics during the first quarter. The standard deviation suggests a moderate variation in students' grades, implying that while most students performed near the average, there were still noticeable differences in individual performance. Overall, the results show that the students were able to meet the expected learning competencies in Mathematics, although there remains room for improvement to reach higher performance levels**.**

Problem 3: What are the students' personal experience in learning mathematics?

Theme 1: Struggles with Foundational and Abstract Mathematical Concepts

Students across grade levels identified Mathematics topics involving **division, square roots, algebraic expressions, quadratic equations, polynomials, and variables (x and y)** as particularly difficult. These topics were often associated with confusion, mental overload, and lack of procedural clarity.

A Grade 7 student stated, *"Square root, because of divide."*
Another student explained, "Division kay lisud sabton." (Division is hard to understand.)
A Grade 9 student shared, *"The most difficult topic in math is quadratic equation."*
A Grade 10 student expressed, "Polynomials, I get dizzy by the number exponent."

Theme 2: Dependence on Teacher Guidance and the Value of Clear Explanations

Students consistently emphasized the importance of **teacher support**, particularly through clear explanations, repetition, and worked examples. Many students reported that understanding improves when teachers re-explain lessons using step-by-step methods.

One student shared, *"Gina explain niya balik ug tagaan kog example para makasabot."*
Another noted, *"Kanang magpa-answer."* (Letting us answer problems helps.)
A Grade 10 student explained, *"My math teacher explains it again but step-by-step, clear and more understandable."However*, several students expressed that explanations are sometimes insufficient. One Grade 7 student stated, *"Ma klaro jud ang examples mas dali masabtan."* (Clear examples are easier to understand.)

These responses suggest that students rely heavily on instructional scaffolding. The need for repeated explanation highlights the importance of adaptive teaching strategies, formative feedback, and differentiated instruction in Mathematics education. According to Rosenshine (2012) emphasized that effective teaching includes modeling procedures, providing worked examples, and offering guided practice before independent work. This approach reduces student confusion and increases comprehension, especially for complex mathematical concepts. In addition, Hattie (2009) found that teacher clarity and feedback have a high positive impact on student achievement. These studies support the findings of the current research, where students expressed a strong reliance on teachers for repeated explanations, worked examples, and opportunities to practice problem-solving under guidance.

Theme 3: Home Environment, Resources, and Digital Learning Support

Students described varied home learning experiences. Some benefited from internet access, parental assistance, and quiet study spaces, while others faced limitations such as lack of support or environmental distractions.

A student stated, *"Internet access at home."*
Another shared, ***"****Parents helps kase pag nahihirapan ka sa tanong sila ang nagtututro sayo."*
In contrast, one student expressed, *"For me it's parents help they don't really pay attention to me when I ask them."*
Interestingly, some students turned to digital platforms for support. A Grade 9 student mentioned, *"In home I watch TikTok mathematics because I really enjoy it and I easily understand it."*

These findings demonstrate that access to learning resources and supportive home environments significantly influence Mathematics learning. The use of informal digital platforms suggests that students are developing self-directed learning strategies, which can supplement formal instruction when guided appropriately. According to Hill and Tyson (2009) found that parental involvement, such as providing assistance and encouragement, positively affects students' academic outcomes. Access to resources like internet connectivity and quiet study spaces further supports learning. Additionally, Dede (2014) noted that digital platforms and informal online resources can enhance student engagement and promote self-directed learning when used appropriately. This supports the present findings that students benefit from internet access, parental help, and digital platforms such as TikTok for understanding mathematics concepts outside the classroom.

Theme 4: Emotional Experiences and Mathematics Anxiety during Assessments

Students expressed strong emotional reactions toward Mathematics tests and quizzes, including fear, anxiety, stress, boredom, and self-doubt. These emotions were often linked to fear of making mistakes, time pressure, and difficulty with large numbers.

One student simply stated, *"Hadluk***.***"* (Scared.)
Another shared, ***"****Na kulbaan ko kay baka mga mali akong answer."* (I get nervous because my answers might be wrong.)
A Grade 9 student said, *"Kinda scared because what if I fail?"*
A Grade 10 student expressed, *"I feel stress… my brain gets slow when it comes to math."*

These responses indicate the presence of mathematics anxiety, which is known internationally to affect students' cognitive processing and performance. Emotional factors play a critical role in students' engagement and achievement in Mathematics. The findings of this study are supported by the research of Ashcraft and Kirk (2001), who examined the effects of mathematics anxiety on students' cognitive performance. Their study revealed that students who experience fear, stress, and anxiety during mathematics tests often show reduced working memory capacity, which negatively affects problem-solving and test performance. Similarly, Ramirez et al. (2013) found that test-related anxiety causes students to focus more on their fear of failure rather than the task itself, leading to slower thinking and increased errors. These findings support the students' experiences of fear, nervousness, and mental blockage during mathematics assessments, indicating that emotional factors play a significant role in students' engagement and achievement in Mathematics.

Theme 5: Students' Voices on Improving Mathematics Instruction

Students offered meaningful suggestions on how Mathematics teaching could be improved. Their recommendations focused on clearer explanations, more examples, simplified solution methods, and lessons paced according to students' level of understanding.

One student suggested, *"Like mag hatag ug example, ipasabot og maayo****.****"*
Another stated, *"Maybe, it would be the way our teacher explain, in that way I can understand much better."*
A Grade 10 student expressed, *"Gusto sana ang division ay short lang yung solution."*

Students' suggestions reflect a strong preference for learner-centered instruction and flexible teaching approaches. Their insights highlight the importance of adapting instructional strategies to students' cognitive and emotional needs. The students' suggestions for clearer explanations, more examples, and simplified solution methods are supported by the study of Rosenshine (2012), which identified effective

teaching practices in Mathematics instruction. The study emphasized that clear explanations, step-by-step demonstrations, and guided practice significantly improve students' understanding and confidence. Additionally, Tomlinson (2014) highlighted the importance of learner-centered instruction, stating that lessons adjusted to students' pace and level of understanding lead to better academic outcomes. These studies support the students' preference for teaching approaches that are flexible, example-based, and responsive to their learning needs.

Problem 4: Is there a significant relationship between the common learning barriers and students' performance in mathematics?

Table 6: The significant relationship between the common learning barriers and students' performance in mathematics

Variable Mean		R-Value	P-Value	Interpretation
X	Y			
Learning Barriers	Students Performance in Mathematics	-0.045	0.626	Not Significant

Table 6 shows the relationship between the common learning barriers (MBA) and students' academic performance in mathematics (AP). The Pearson correlation coefficient of $r = -0.045$ indicates a very weak negative relationship between the two variables. The computed p-value of 0.626, which is higher than the 0.05 level of significance, means that the relationship is not statistically significant. According to Field (2018), a correlation is considered significant only when the p-value is less than or equal to 0.05. Therefore, the result suggests that common learning barriers do not have a significant effect on students' performance in mathematics. Hence, the null hypothesis stating that there is no significant relationship between learning barriers and mathematics performance is accepted.

Ethical Considerations

This study followed ethical standards in educational research to protect the rights and welfare of the participants. Permission to conduct the study was obtained from the Department of Education Division Office and the School Principal of Buenavista Integrated School. Informed consent was secured from all participants after explaining the purpose of the study, the procedures involved, and their right to participate voluntarily or withdraw at any time without consequences. Confidentiality and anonymity were strictly observed. Participants' identities were protected through the use of codes, and no personal information was disclosed in the data analysis or report. Academic records were accessed only with proper authorization and handled in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173). All data collected were used solely for research purposes and stored securely. The study ensured that participants were not exposed to physical, psychological, or emotional harm. Survey questions were non-intrusive, and data collection was conducted during students' free time to avoid disruption and coercion. Ethical principles of fairness, objectivity, and academic integrity were upheld throughout the research process.

Conclusion

The findings of the study, it can be concluded that Junior High School students at Buenavista Integrated School moderately experience learning barriers in Mathematics, particularly in the cognitive and affective aspects. Affective factors such as difficulty in maintaining focus, anxiety, and motivation play a slightly greater role in influencing students' learning experiences compared to cognitive and environmental barriers. Despite the presence of these learning barriers, students' academic performance in Mathematics during the first quarter remains generally satisfactory, indicating that students are still able to meet the minimum academic expectations. Furthermore, the study revealed no significant relationship between learning barriers and students' academic performance in Mathematics, suggesting that other factors such as teaching strategies, assessment methods, individual learning styles, and classroom practices may have a greater influence on students' grades. These findings imply that effective instructional strategies, clear explanations, and sufficient practice activities are essential in reducing cognitive barriers, while fostering positive attitudes, self-confidence, and motivation among students can help lessen affective barriers. In addition, providing a supportive home environment with minimal distractions, maintaining well-organized classrooms, ensuring adequate instructional materials, and designing curricula that consider students' emotional and cognitive needs can further enhance Mathematics learning outcomes.

Reccomendations

Based on the findings and conclusions drawn from the study, several recommendations are proposed to help improve students' learning experiences in Mathematics. Teachers are encouraged to incorporate varied teaching strategies such as guided practice, the use of real-life examples, collaborative learning, and formative feedback to better address students' learning needs and reduce learning barriers. Schools should strengthen academic support programs by offering remedial classes, tutoring sessions, and continuous teacher training focused on learner-centered instruction. Parents and guardians are advised to provide a conducive home study environment with minimal distractions and to encourage positive attitudes toward Mathematics learning. Students, on the other hand, should be motivated to develop effective study habits, actively participate in class activities, and seek clarification whenever they encounter difficulties in understanding mathematical concepts. Finally, future researchers may conduct further studies by considering additional variables such as teaching styles, learning strategies, and socio-economic factors, as well as by using larger samples or mixed research methods to gain deeper insights into students' learning in Mathematics.

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