Learning Styles and Anxiety Levels as Predictors of Academic Performance Among Junior High School Students At La Salette of Ramon: Basis for Developing an Intervention Program

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ABSTRACT

This study looked into how learning styles and mathematics anxiety relate to the academic performance of junior high school students at La Salette of Ramon during the School Year 2025–2026. It sought to determine the students' preferred learning styles, measure their level of mathematics anxiety, evaluate their academic performance in Mathematics, and examine how these variables are connected. The results served as the basis for developing an intervention program.

The study used a descriptive-correlational quantitative research design. A total of 200 students were chosen from the entire population of junior high school learners. Data were gathered through a structured questionnaire that included an adapted Perceptual Learning Style Preference Questionnaire (PLSPQ) and Mathematics anxiety scales, specifically the Mathematics Anxiety Rating Scale (MARS) and the Abbreviated Math Anxiety Scale (AMAS). To interpret the data, the study employed weighted mean, frequency and percentage distribution, and Pearson's correlation coefficient.

The findings showed that the students demonstrated strong preferences for several learning styles, with auditory, kinesthetic, and visual learning emerging as the most evident. Mathematics anxiety was also present at different levels, with test-taking anxiety and anxiety toward numerical tasks being more commonly experienced than course-related anxiety and anxiety in everyday numerical situations. In terms of academic performance, most of the students obtained grades ranging from satisfactory to excellent in Mathematics.

The analysis further revealed that learning styles did not show a statistically significant relationship with Mathematics achievement. Mathematics anxiety, on the other hand, showed a significant negative relationship with achievement. This means that as students' anxiety in Mathematics increases, their academic performance tends to decline.

These findings suggest that although learning preferences describe how students usually approach lessons and activities, emotional concerns such as anxiety have a stronger influence on their academic results. In view of this, the study recommends creating focused intervention programs that will help lessen mathematics anxiety and provide students with a more encouraging learning experience, which may lead to better performance in Mathematics.

Keywords: Learning Styles, Mathematics Anxiety, Mathematics Achievement, Junior High School Students, Descriptive-Correlational Study, Intervention Program

INTRODUCTION

Education plays an important role in shaping students' academic success, especially during the junior high school years when learners begin to face more complex academic demands. At this stage, students show clear differences in how they understand lessons, respond to challenges, and manage their emotions in school. Among the many factors that influence academic performance, learning styles and anxiety levels are often highlighted because they directly affect how students engage in the learning process.

Learning styles refer to the preferred ways students receive and process information. Some learners understand lessons better through visual materials, while others learn more effectively through listening or hands-on activities. In the Philippine educational system, recognizing these differences has become increasingly important as teachers try to address diverse student needs inside the classroom. A study conducted among junior high school students at Misamis University revealed that learners demonstrate varying preferences in learning styles, which can influence how they perform academically (Dacillo et al., 2023). While some studies found no strong link between learning styles and grades, others suggest that certain styles, such as kinesthetic learning, may contribute to better academic outcomes in specific subjects (Cabaces, 2024; Tolotolo National High School study, 2024). These findings show that learning styles still deserve attention, particularly when designing teaching strategies that match students' preferences.

Aside from learning styles, anxiety is another factor that significantly affects students' academic performance. Anxiety in school may come from tests, classroom participation, peer pressure, or fear of failure. In many cases, students who experience higher levels of anxiety struggle to focus, recall information, and perform well in assessments. Research conducted in the Philippines found that language anxiety can predict students' academic performance, particularly in English subjects (Reyes, 2023). Similarly, another study involving Filipino students showed that anxiety related to learning environments can negatively affect academic outcomes (Lobitana et al., 2023). These findings highlight how emotional factors can interfere with students' ability to achieve their full academic potential.

In addition, recent local studies show that junior high school students commonly experience moderate levels of stress and anxiety due to academic demands. For instance, research conducted in Davao Occidental revealed that students encounter different stressors in school, which are linked to their coping mechanisms and overall academic experience (Joseph et al., 2023). This suggests that emotional challenges are part of students' everyday school life, and these challenges may influence how well they perform academically.

At the same time, there is growing evidence that both learning styles and anxiety can work together in shaping academic performance. A recent study in Capiz involving Grade VI pupils found a significant relationship between learning styles, anxiety, and academic performance, showing that these variables are interconnected rather than independent (Garingo, 2025). When students struggle to learn in ways that match their preferences, they may feel frustrated or anxious, which can further affect their performance. On the other hand, when teaching approaches align with students' learning styles, it may help reduce anxiety and improve academic outcomes.

Despite these findings, many schools still focus more on academic results than on understanding the factors that influence them. Teachers may not always have enough information about how students learn best or how anxiety affects their classroom performance. As a result, some students continue to struggle without receiving the

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appropriate support that could help them improve. This gap highlights the need for studies that examine both learning styles and anxiety together, particularly among junior high school students in La Salette of Ramon.

This study aims to determine how learning styles and anxiety levels predict the academic performance of junior high school students at La Salette of Ramon. By examining these variables, the study hopes to provide a clearer understanding of how students learn and what challenges they face in their academic journey. The findings of this research will serve as a basis for developing an intervention program that can support students in improving their academic performance.

The proposed intervention program may include strategies that align teaching methods with students' preferred learning styles, as well as activities that help manage and reduce anxiety in the classroom. These may involve differentiated instruction, guidance programs, and stress management techniques that are appropriate for junior high school learners. Through this approach, the study seeks to contribute to improving students' learning experiences and helping them perform better academically.

Objectives of the Study

Generelly, the study attempted to appraise the Learning Styles and Anxiety Levels as Predictors of Academic Performance among Junior High School Students at La Salette of Ramon: Basis for an Intervention Program.

Specifically, it sought to answer the following questions:

What are the preferred learning styles of junior high school students in terms of:

1.1. Visual learning;

1.2. Auditory learning;

1.3. Tactile;

1.4. Kinesthetic learning;

1.5. Group; and

1.6. Individual?

What is the level of Mathematics anxiety of junior high school students in terms of:

2.1. Test-taking anxiety;

2.2. Numerical task anxiety;

2.3. Course-related anxiety; and

2.4. Everyday numerical anxiety?

What is the level of Mathematics achievement of junior high school students based on their current grade in Mathematics for the school year 2025 - 2026?

What significant relationship exists between the learning styles and anxiety levels of junior high school students and their Mathematics achievement?

What Mathematics Intervention Program, addressing students' learning styles, mathematics anxiety, and achievement levels, can be developed based on the findings of the study?

METHODOLOGY

This study employed a descriptive–correlational quantitative research design to examine the learning styles and mathematics anxiety levels and their relationship to Mathematics achievement among junior high school students at La Salette of Ramon for the School Year 2025–2026. The descriptive approach was used to identify students' preferred learning styles, levels of mathematics anxiety, and academic performance, while the correlational approach determined the relationship among these variables (Creswell & Creswell, 2018).

Sampling Design

The respondents of the study were junior high school students from La Salette of Ramon during the School Year 2025–2026. A total of 200 students were selected from the overall population of junior high school learners.

Stratified random sampling was used to ensure representation from each grade level. Specifically, 50 students were selected from Grade 7, 50 from Grade 8, 50 from Grade 9, and 50 from Grade 10. Within each grade level, simple random sampling was applied to give all students an equal chance of being chosen and to minimize selection bias.

Research Instrument

Data were collected using a structured questionnaire consisting of two main parts:

Learning Styles Questionnaire – adapted from the Perceptual Learning Style Preference Questionnaire (PLSPQ) by Reid (1984), which measures six learning styles: visual, auditory, tactile, kinesthetic, group, and individual. The instrument uses a Likert scale and classifies learning preferences into major, minor, and negligible categories.

Mathematics Anxiety Questionnaire – adapted from the Mathematics Anxiety Rating Scale (MARS) and the Abbreviated Math Anxiety Scale (AMAS). It measures four dimensions of anxiety: test-taking anxiety, numerical task anxiety, course-related anxiety, and everyday numerical anxiety.

The instrument underwent pilot testing and showed high reliability, with Cronbach's alpha values ranging from 0.87 to 0.90, indicating strong internal consistency.

Statistical Design

Several statistical tools were used to analyze the data:

1. Weighted mean was used to determine the preferred learning styles and levels of mathematics anxiety among students.

2. Frequency and percentage distribution were used to describe the respondents' data and academic performance.

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3. Students' Mathematics achievement was interpreted using the DepEd grading scale (Outstanding to Did Not Meet Expectations) based on DepEd Order No. 8, s. 2015.

4. Pearson's correlation coefficient (r) was used to determine the significant relationship between learning styles, mathematics anxiety, and Mathematics achievement.

These statistical methods enabled the researcher to describe students' learning characteristics and examine how these relate to their academic performance in Mathematics.

RESULTS AND DISCUSSIONS

The Learning Styles of Junior High School Students

Table 1. Preferred Learning Styles of Junior High School Students in terms of Visual Learning

Category	Frequency	Percentage
Negligible	2	1.0
Minor	66	33.0
Major	132	66.0
Total	**200**	**100.0**

Table 1 presents the preferred learning styles of junior high school students in terms of visual learning. The data show that the largest share of respondents falls under the major category (66.0%), followed by those in the minor category (33.0%), while only 1.0% are negligible. This suggests that many students prefer learning through visual materials such as diagrams, charts, graphs, illustrations, and other written or image-based representations. These results show that visual learning remains a strong preference among the respondents.

This means that students are more likely to understand lessons when ideas are presented in a form they can clearly see and organize. In Mathematics, where many concepts are abstract, visual representations can help make lessons easier to follow. The result supports the idea that teachers may improve students' understanding by using diagrams, structured examples, and other visual aids during instruction.

This finding aligns with the study of Cebu Technological University (2021) and Cercado (2023), which found that visual strategies such as diagrams, charts, and visual aids improve students' understanding and performance in Mathematics. Similarly, Emban (2024) emphasized that visual learners demonstrate better comprehension and engagement when lessons are presented through visual representations. It implies that integrating visual approaches in teaching Mathematics can make learning more meaningful and accessible for students. When teachers consistently use diagrams, illustrations, and structured visual guides, students are more likely to grasp complex concepts, stay engaged in class, and develop stronger problem-solving skills, which can positively influence their academic performance.

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Table 2. Preferred Learning Styles of Junior High School Students in terms of Tactile Learning

Category	Frequency	Percentage
Negligible	2	1.0
Minor	70	35.0
Major	128	64.0
Total	200	100.0

Table 2 presents the preferred learning styles of junior high school students in terms of tactile learning. The data reveal that 64.0% of the respondents belong to the major category, 35.0% fall under the minor category, and only 1.0% are negligible. This indicates that many students prefer learning through hands-on activities such as writing, manipulating objects, completing tasks, and engaging directly with classroom work.

The findings suggest that students learn better when they are actively involved in the lesson instead of only listening or watching. In Mathematics, practical activities and written exercises can help students connect ideas more clearly and remember them more effectively. This also points to the value of using activity-based strategies so that students can participate more directly in the learning process.

This finding is supported by Dela Cruz (2023) and Navarro et al. (2021), who found that students who engage in hands-on and activity-based learning demonstrate better understanding and retention in Mathematics. These studies highlight that tactile learners grasp concepts more effectively when they are involved in practical tasks and real-life applications. It implies that incorporating activities such as problem-solving tasks, written exercises, and manipulative-based learning can strengthen students' comprehension. When learners are given opportunities to actively participate, they are more likely to stay engaged, reduce confusion, and build deeper understanding, which can lead to improved performance in Mathematics.

Table 3. Preferred Learning Styles of Junior High School Students in terms of Auditory Learning

Category	Frequency	Percentage
Negligible	1	0.5
Minor	48	24.0
Major	151	75.5
Total	200	100.0

Table 3 presents the preferred learning styles of junior high school students in terms of auditory learning. The data show that a large majority of the respondents are in the major category (75.5%), while 24.0% are in the minor category and only 0.5% are negligible. This indicates that most students prefer learning by listening to explanations, discussions, and teacher-led instruction.

The result suggests that students respond well when lessons are discussed clearly and when they are given opportunities to hear concepts explained step by step. Verbal explanation, recitation, and guided discussion may help students understand lessons better, especially in subjects that require careful reasoning such as Mathematics. This shows that spoken instruction remains an important part of effective classroom teaching.

This finding is supported by Cercado (2023) and Emban (2024), who found that students who are exposed to clear verbal explanations and interactive discussions tend to develop better understanding and engagement in

Mathematics. These studies shows that auditory learners benefit when teachers explain concepts step-by-step and encourage participation through recitation and dialogue. It implies that effective teaching in Mathematics should include strong verbal instruction, guided discussions, and opportunities for students to express their understanding orally. When students are able to listen, ask questions, and participate in discussions, they are more likely to clarify misunderstandings and build confidence in solving mathematical problems.

Table 4. Preferred Learning Styles of Junior High School Students in terms of Kinesthetic Learning

Category	Frequency	Percentage
Negligible	2	1.0
Minor	46	23.0
Major	152	76.0
Total	200	100.0

Table 4 presents the preferred learning styles of junior high school students in terms of kinesthetic learning. The data show that 76.0% of the respondents fall under the major category, 23.0% are in the minor category, and 1.0% are negligible. This means that most students prefer learning through movement, direct participation, and active involvement in classroom tasks.

The findings show that students may understand lessons better when they are given the chance to do, explore, and apply what they learn. In Mathematics, activities that involve demonstrations, real-life applications, and interactive problem-solving can help students stay engaged and build clearer understanding. This points to the importance of giving learners opportunities to become active participants rather than passive receivers of information.

This finding is supported by Dela Cruz (2023) and Emban (2024), who emphasized that students who engage in physical and activity-based learning tend to have better understanding and retention of mathematical concepts. These studies show that kinesthetic learners perform better when lessons involve movement, interaction, and practical application. It implies that incorporating activities such as experiments, role-playing, and interactive problem-solving tasks can enhance students' learning experiences. When students are given the chance to move, explore, and apply concepts in real situations, they become more engaged, develop deeper understanding, and gain confidence in learning Mathematics.

Table 5. Preferred Learning Styles of Junior High School Students in terms of Group Learning

Category	Frequency	Percentage
Negligible	13	6.5
Minor	75	37.5
Major	112	56.0
Total	200	100.0

Table 5 presents the preferred learning styles of junior high school students in terms of group learning. The data indicate that 56.0% of the respondents belong to the major category, 37.5% are in the minor category, and 6.5% are

negligible. This shows that more than half of the students prefer learning with others through group work, collaboration, and shared classroom activities.

The result suggests that many students are comfortable discussing ideas with classmates, exchanging answers, and solving problems together. Group learning can help students clarify difficult lessons through peer interaction and shared thinking. Although this learning style is not as high as auditory and kinesthetic learning, it still shows that collaborative work has an important place in the classroom.

This finding is supported by Cercado (2023) and Navarro et al. (2021), who found that collaborative learning helps students improve understanding and engagement in Mathematics through interaction and shared problem-solving. These studies show that students benefit from exchanging ideas and receiving feedback from peers, which can clarify difficult concepts. It implies that incorporating group activities, such as cooperative problem-solving and peer discussions, can enhance learning experiences in Mathematics. When students work together, they are more likely to develop communication skills, build confidence, and deepen their understanding of mathematical concepts through shared learning experiences.

Table 6. Preferred Learning Styles of Junior High School Students in terms of Individual Learning

Category	Frequency	Percentage
Negligible	9	4.5
Minor	56	28.0
Major	135	67.5
Total	200	100.0

Table 6 presents the preferred learning styles of junior high school students in terms of individual learning. The data reveal that 67.5% of the respondents are in the major category, 28.0% are in the minor category, and 4.5% are negligible. This means that many students also prefer learning on their own, working independently, and processing lessons at a personal pace.

The findings suggest that students value time to think, solve problems, and complete tasks independently. In Mathematics, individual practice can help learners concentrate, identify their own difficulties, and strengthen their understanding through repeated work. This shows that aside from collaboration and discussion, students also benefit from opportunities to study and answer tasks on their own.

This finding is supported by Emban (2024) and Cebu Technological University (2021), which highlight that independent learning allows students to develop deeper understanding and self-reliance in mastering mathematical concepts. These studies emphasize that learners who are given opportunities to work individually can better organize their thoughts and build confidence in their abilities. It implies that providing tasks that allow independent practice, such as seatwork, problem-solving exercises, and self-paced activities, can strengthen students' comprehension. When students are able to work independently, they can reflect more deeply, identify their own difficulties, and gradually improve their performance in Mathematics.

Extent of Mathematics Anxiety of Junior High School Students

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Table 7. The mathematics Anxiety of Junior High School Students

Statement Indicators	Mean	Description
TEST-TAKING ANXIETY	2.80	Often
1. I feel nervous before taking a Mathematics test.	2.73	Often
2. During a math test, I find it hard to concentrate.	2.43	Rarely
3. I feel my heart racing when I see math test questions.	3.03	Often
4. I worry that I might fail every time I take a math exam.	2.66	Often
5. Even when I study, I still panic during math tests.	2.80	Often
NUMERICAL TASK ANXIETY		
6. I feel tense when solving math problems involving multiple steps.	2.76	Often
7. I get nervous when performing mental calculations.	2.68	Often
8. I feel uncomfortable when using numbers in real-life situations.	2.35	Rarely
9. I find it stressful to work with fractions, percentages, or ratios.	2.53	Often
10. I feel anxious when asked to estimate or calculate without a calculator.	2.62	Often
COURSE-RELATED ANXIETY		
11. I feel anxious whenever my math teacher explains a new topic.	2.18	Rarely
12. I get worried when I see the Mathematics syllabus or textbook.	2.40	Rarely
13. I feel stressed when attending math classes.	2.16	Rarely
14. I often think that Mathematics is too difficult for me to learn.	2.42	Rarely
15. I feel uneasy about the amount of math work I need to do.	2.48	Rarely
EVERYDAY NUMERICAL ANXIETY		
16. I feel nervous when asked to calculate expenses while shopping.	2.32	Rarely
17. I avoid tasks that require interpreting graphs or charts.	2.06	Rarely
18. I feel anxious when checking if I have received the correct change.	2.34	Rarely
19. I feel tense when comparing prices or discounts in stores.	2.21	Rarely
20. I find it stressful to understand data or numbers in news articles.	2.42	Rarely

The data show that students experience test-taking anxiety at a level of "often" (2.80). Many students feel nervous before taking a Mathematics test (2.73) and even experience physical reactions such as a racing heart when they see test questions (3.03). They also worry about failing (2.66) and feel panic during exams even when they have studied (2.80). However, difficulty in concentrating during tests is rated as "rarely" (2.43), which means that while students feel anxious, they are still somewhat able to focus. This means that the pressure of examinations creates emotional tension among students, even if it does not always fully disrupt their concentration.

It implies that tests are a major source of stress for students. The presence of fear, worry and physical reactions shows that students associate Mathematics with performance pressure. Even when they prepare, anxiety still affects their confidence, which may influence how well they perform during exams.

Students experience numerical task anxiety at a level of "often." They feel tense when solving multi-step problems (2.76) and get nervous when performing mental calculations (2.68). They also find working with fractions,

percentages, or ratios stressful (2.53) and feel anxious when asked to calculate without a calculator (2.62). However, discomfort when using numbers in real-life situations is rated as "rarely" (2.35). This means that anxiety is more evident when tasks are complex or require accuracy and speed.

It implies that students become uneasy when they are faced with challenging mathematical processes. Tasks that require multiple steps or mental effort can create pressure, which affects their confidence. At the same time, their lower anxiety in real-life situations shows that they are more comfortable when Mathematics feels practical and less demanding.

The data show that course-related anxiety is experienced at a level of "rarely." Students rarely feel anxious when the teacher explains a new topic (2.18), when they see the syllabus or textbook (2.40), or when attending math classes (2.16). They also rarely think that Mathematics is too difficult (2.42) or feel uneasy about the amount of work (2.48). This means that students are generally comfortable during regular classroom learning.

It implies that the classroom environment is not the main source of anxiety. Students are able to follow lessons and engage in discussions without strong negative feelings. This also means that anxiety tends to arise more during performance-based situations rather than during instruction.

Students experience everyday numerical anxiety at a level of "rarely." They rarely feel nervous when calculating expenses (2.32), interpreting graphs (2.06), checking change (2.34), comparing prices (2.21), or understanding numerical data in news (2.42). This means that students are generally at ease when using numbers in daily life.

It implies that students do not strongly associate Mathematics with everyday stress. They are able to apply basic numerical skills in real-life situations without much fear. This shows that anxiety is more linked to academic pressure rather than to the actual use of numbers in daily activities.

The Academic Performance of Students

Table 8. Distribution of the Student-Respondents According to their Academic Performance in Mathematics

Grade Range	Frequency	Percent
90–100 (Excellent)	94	47.0
85–89 (Very Satisfactory)	52	26.0
80–84 (Satisfactory)	33	16.5
75–79 (Fairly Satisfactory)	21	10.5
Total	**200**	**100.0**

The data show that nearly half of the respondents, or 94 students (47.0%), fall under the excellent category (90–100). This is followed by 52 students (26.0%) in the very satisfactory range, 33 students (16.5%) in the satisfactory level, and 21 students (10.5%) in the fairly satisfactory category. These figures show that many of the junior high school students are performing well in Mathematics, with a considerable number obtaining high grades. The distribution suggests that strong academic performance in the subject is common among the respondents, while a smaller portion belongs to the lower performance group.

This means that even though mathematics anxiety may be present among students, many are still able to maintain commendable academic performance. This may suggest that learners are finding ways to deal with the demands of the subject despite pressure during examinations, recitations, or problem-solving activities. It also suggests that

achievement in Mathematics is not shaped by anxiety alone, since other factors such as study habits, teaching approaches, and learning styles may also contribute to students' performance. The presence of many high-performing students shows that when learners receive proper guidance and suitable learning experiences, they can handle difficulties in Mathematics and attain positive academic results.

Relationship between the Learning Styles and Anxiety Levels of Junior High School Students and their Mathematics Achievement.

Table 9: Correlation Between Learning Styles, Mathematics Anxiety, and Mathematics Achievement

Variables	r-value (GWA)	Sig. (2-tailed)
Visual	0.061^{ns}	0.276
Tactile	-0.077^{ns}	0.168
Auditory	0.060^{ns}	0.283
Kinesthetic	0.012^{ns}	0.831
Group	-0.033^{ns}	0.559
Individual	0.104^{ns}	0.063
Anxiety_Mean	-0.326**	0.000

*Legend: * = Significant, ns = Not significant*

Table 16 shows that none of the learning style variables has a significant relationship with Mathematics achievement, since all their p-values are greater than 0.05. Visual learning has r = 0.061, p = 0.276, tactile has r = -0.077, p = 0.168, auditory has r = 0.060, p = 0.283, kinesthetic has r = 0.012, p = 0.831, group has r = -0.033, p = 0.559, and individual has r = 0.104, p = 0.063. These results lead to the acceptance of the null hypothesis for all six learning styles. This means that although students clearly show preferred ways of learning, those preferences do not appear to translate directly into higher or lower Mathematics achievement in this group. In practical terms, being more visual, auditory, kinesthetic, group-oriented, or individual-oriented did not by itself make a student more likely to obtain a higher grade in Mathematics. This does not mean learning styles are unimportant. It means that in this study, they do not have a statistically meaningful direct relationship with achievement. This interpretation aligns to the literature review which notes that the connection between learning styles and achievement is not always straightforward and that other factors such as motivation, prior knowledge, and anxiety may exert stronger influence on performance (Wan Hussin & Mohd Matore, 2023; Ocampo et al., 2023; Dewi Hariri et al., 2024).

A different picture appears in Mathematics anxiety which shows a significant negative relationship with Mathematics achievement at r = -0.326, p = 0.000. This result leads to the rejection of the null hypothesis for anxiety. The negative value means that as mathematics anxiety increases, Mathematics achievement tends to decrease. The relationship is not merely present but meaningful enough to show that anxiety is moving in the opposite direction of performance. Students who carry more fear, tension, and worry toward Mathematics are more likely to obtain lower grades, while those with lower anxiety tend to perform better. Among all the variables tested, anxiety is the only one that shows a significant connection with achievement, which makes it the more powerful factor in explaining students' performance in this study. This supports the discussion in the literature review that mathematics anxiety can interfere with working memory, reduce concentration, weaken confidence, and eventually lower achievement, even when students may have learning preferences that match classroom instruction (Namkung et al., 2021; Finell et al., 2022). The literature also states that when learning styles and anxiety are examined together,

anxiety often emerges as the stronger predictor of Mathematics achievement, while learning-style alignment accounts for only a modest portion of variance (Ocampo et al., 2023).

The table reveals an important reality about junior high school learners. Students may know how they prefer to learn and teachers may try to respond to those preferences, but preference alone is not enough to guarantee strong performance. Emotional condition matters more when it comes to actual achievement. A student may prefer visual materials or hands-on activities, yet still struggle in Mathematics if fear of failure, tension during problem solving, or panic during assessment is left unresolved. This explains why anxiety stands out in the results while the learning styles do not. It implies that improving Mathematics achievement requires more than matching instruction to learning preferences. It also requires creating a classroom climate where students feel safe to think, make mistakes, ask questions, and work through difficult tasks without being overwhelmed by pressure. This is consistent with the study's direction which emphasizes not only awareness of learning styles but also the need to identify and address students' anxiety in order to build confidence and improve outcomes in Mathematics.

Proposed Mathematics Intervention Program

Rationale

The results of the study show that junior high school students display strong preferences in visual, tactile, auditory, kinesthetic, group, and individual learning styles, with major preferences observed across all six dimensions. At the same time, students experience mathematics anxiety most strongly in test-taking and numerical-task situations, while course-related and everyday numerical anxiety are generally lower. The correlation analysis further reveals that mathematics anxiety has a significant negative relationship with Mathematics achievement, whereas learning styles do not have a direct significant relationship with grades. These findings mean that students need instruction that respects how they learn best, but they also need deliberate support in managing fear, pressure, and loss of confidence during assessments and complex problem solving. This intervention program was therefore designed to combine differentiated instruction, anxiety-reduction supports, assessment adjustments, and learner monitoring so that students can participate more confidently and sustain stronger performance in Mathematics.

Program Goal

Within one grading period, the school shall implement a structured Mathematics Intervention Program that improves learner engagement through multimodal instruction, reduces mathematics anxiety in test-taking and numerical tasks, and sustains or improves Mathematics achievement among junior high school students as reflected in classroom assessments, anxiety-monitoring tools, and quarterly performance records.

SMART Objectives

1. Specific: Use visual, auditory, tactile, kinesthetic, group, and individual learning activities in every Mathematics class at least twice per week.

2. Measurable: Reduce the mean ratings of test-taking and numerical-task anxiety by at least 0.20 points after one grading period based on teacher-made monitoring forms or the same anxiety scale.

3. Achievable: Provide short weekly anxiety-management and problem-solving support sessions for identified learners for 8 to 10 weeks.

4. Relevant: Focus the intervention on the areas most linked to lower achievement, especially mathematics anxiety during tests and complex numerical tasks.

5. Time-bound: Evaluate implementation and learner outcomes at the end of the grading period and revise the program for the next cycle.

Table 10. Intervention Plan Matrix

Area of Need	SMART Objective	Key Strategies / Activities	Persons Involved	Timeline	Resources	Success Indicators / Means of Verification
Learning-style responsive instruction	By the end of one grading period, **100% of Mathematics teachers** will deliver at least **2 multimodal lessons per week** that include visual, auditory, tactile/kinesthetic, and independent or group tasks.	Use diagrams, anchor charts, color-coded worked examples, think-alouds, manipulatives, station work, pair tasks, and short individual reflection sheets. Prepare a weekly lesson tracker for modalities used.	Mathematics teachers, Department Head, Students	Weeks 1–10	Lesson exemplars, charts, flashcards, manipulatives, activity sheets, projector/board materials	Completed lesson tracker; classroom observation notes; student participation records; sample multimodal lesson plans
Test-taking anxiety	Within **10 weeks**, reduce test-related panic and worry by at least **0.20 mean points** through low-stakes practice and anxiety-management routines.	Conduct weekly 10-minute test-readiness drills, breathing exercises before quizzes, exam familiarization, retrieval practice, error analysis, and confidence statements. Use short mock quizzes with immediate supportive feedback.	Mathematics teachers, Adviser, Guidance Focal Person, Students	Weeks 2–10	Practice quizzes, reflection slips, breathing script cards, feedback templates	Pre-/post-anxiety ratings for panic and worry; reduced blank responses in quizzes; improved quiz completion rate
Numerical-task anxiety	Within one grading period, improve student comfort in multi-step solving, fractions, ratios, and estimation through	Hold one remedial/clinic session per week focused on one difficult skill. Use worked examples,	Mathematics teachers, Peer Tutors, Students	Weeks 2–10	Skill cards, manipulatives, number lines, fraction strips, estimation tasks,	Clinic attendance sheets; skill-check scores; reduction in reported tension on targeted anxiety items;

	scaffolded weekly skill clinics.	peer tutoring, manipulative-based fraction tasks, and calculator-free estimation games.			remediation worksheets	improved item analysis in tests
Confidence and self-monitoring	By the end of the grading period, at least **80% of participating students** will complete weekly reflection logs and set **one personal Mathematics improvement goal**.	Use reflection notebooks, traffic-light confidence checks, goal cards, and short conferencing. Recognize effort, persistence, and strategy use rather than scores alone.	Students, Mathematics Teachers, Advisers	Weeks 1–10	Reflection logs, goal cards, monitoring checklist	Completed logs; student goals reviewed every two weeks; conference notes; evidence of improved help-seeking and task persistence
Assessment support and achievement monitoring	Within one grading period, maintain or improve quarterly Mathematics performance of target learners while reducing anxiety-related performance drops during assessments.	Use formative checks, itemized feedback, chunked quizzes, review guides, and post-test correction sessions. Identify at-risk learners and provide follow-up coaching after each major assessment.	Mathematics Teachers, Department Head, Advisers, Parents/Guardians	Weeks 1–10 and End-of-Quarter Review	Assessment tracker, review guides, parent communication forms, intervention logbook	Quarterly grades; pre-/post-test comparison; list of coached learners; parent contact records; intervention summary report
Home-school support for anxious learners	Within the grading period, orient parents/guardians of identified learners and secure at least **one home support action per learner**.	Conduct a short parent orientation or send guidance sheets on supportive routines, reduced-pressure language, and simple number-practice tasks at home.	Adviser, Mathematics Teacher, Parents/Guardians	Week 3 and Week 7 Follow-up	Parent memo, home support guide, feedback form	Signed parent acknowledgement; returned feedback forms; teacher notes on learner follow-through

Monitoring and Evaluation

The program shall be monitored through weekly implementation logs, classroom observation notes, learner reflection sheets, skill-check records, and quarterly Mathematics grades. A simple pre-intervention and post-intervention anxiety check may be administered using the same indicators on test-taking and numerical-task anxiety. Results should be reviewed by the Mathematics teacher and school head at the end of the grading period to determine which strategies need to be sustained, improved, or expanded.

Expected Outcome

If implemented consistently, the intervention program is expected to make Mathematics instruction more responsive to student learning preferences, reduce anxiety during tests and demanding numerical tasks, strengthen student confidence, and support steady or improved achievement in Mathematics.

CONCLUSION

The following are the conclusions for the study that are based on the previously presented findings and their implications.

1. Junior high school students demonstrate strong preferences across all identified learning styles, with auditory and kinesthetic emerging as the most dominant, followed by individual, visual, tactile, and group learning. This indicates that learners utilize multiple approaches in understanding Mathematics rather than relying on a single learning style.

2. The level of Mathematics anxiety among students is more evident in test-taking and numerical task situations, which are experienced at the level of "often," while course-related and everyday numerical anxiety are experienced at the level of "rarely." This means that anxiety is more pronounced during performance and complex problem-solving tasks rather than during regular classroom instruction or daily numerical activities.

3. The level of Mathematics achievement of junior high school students is generally high, with most learners falling under the Excellent and Very Satisfactory categories, indicating that despite experiencing anxiety, students are still able to maintain good academic performance in Mathematics.

4. There is no significant relationship between the different learning styles and Mathematics achievement. However, a significant negative relationship exists between Mathematics anxiety and achievement, indicating that as anxiety increases, students' performance in Mathematics tends to decrease. This suggests that emotional factors, particularly anxiety, have a greater influence on academic performance than learning style preferences.

RECOMMENDATION

Based on the findings and conclusions of the study, the following recommendations are proposed:

1. Mathematics teachers are encouraged to use multimodal teaching strategies that incorporate visual, auditory, kinesthetic, tactile, group, and individual activities to address students' varied learning preferences and enhance engagement in Mathematics lessons.

2. Teachers should implement anxiety-reduction strategies, particularly during tests and complex problem-solving tasks, such as providing guided practice, giving clear instructions, using low-stakes assessments, and creating a supportive classroom environment that reduces fear and pressure.

3. Schools and administrators are encouraged to develop and implement structured intervention programs focused on reducing Mathematics anxiety, especially in test-taking and numerical tasks, through counseling support, confidence-building activities, and stress management techniques.

4. Teachers should provide additional support in complex mathematical tasks, such as multi-step problem solving, mental calculations, and estimation, through scaffolding, step-by-step demonstrations, and regular practice to help students build confidence and reduce anxiety.

5. Students are encouraged to develop positive study habits and self-regulation strategies, such as regular practice, seeking help when needed, and maintaining a positive mindset toward Mathematics to manage anxiety and improve performance.

6. Parents or guardians are encouraged to provide a supportive home environment by motivating students, reducing pressure related to performance, and encouraging practice in Mathematics to help lessen anxiety and build confidence.

7. Future researchers are encouraged to explore other factors influencing Mathematics achievement, such as motivation, teaching strategies, and self-efficacy, to further understand the variables affecting students' performance beyond learning styles and anxiety.

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At present, she is a Mathematics teacher at La Salette of Ramon, where she has been teaching for one year. As an educator, she is committed to helping students develop their understanding of Mathematics and improve their academic performance. Her experiences as a teacher inspired her to conduct this study in the hope of contributing meaningful ideas that may help learners overcome challenges in the subject and achieve better results.