

# Teacher's Attitude of School Learning Action Cell (SLAC) and Students' Perception Towards Mathematics

Juliet J. Maga-Vasquez\*

Teacher III, Department of Education, Catarman National High School, Catarman, Northern Samar, Philippines

**Abstract**—The School Learning Action Cell (LAC) is a group of teachers in the Philippine Department of Education (DepEd) system that meets for collaborative learning to address common teaching challenges, share best practices, and enhance instruction and student learning, thereby functioning as a school-based professional development community focused on action and results. This descriptive study explored teachers' attitudes and students' perceptions towards mathematics among 17 junior mathematics teachers and 394 junior high students. A researcher made instrument, consisting of three parts, served as the primary tool for data collection. The findings revealed that all the grade levels were represented, with Grade 7 forming the largest group. The study further revealed that student learning in mathematics was not significantly affected by age, gender, daily allowance, or grade level. However, a positive teacher attitude toward SLAC significantly improved students' perception, and teachers expressed strong appreciation for the professional benefits of SLAC, while students showed positive and negative perceptions towards mathematics.

**Index Terms**—mathematics, teachers' attitude, student perception, school learning action cell (SLAC).

## 1. Introduction

The Department of Education institutionalized Learning Action Cells (LACs) through DepEd Order No. 35, s. 2016, and promoted the School Learning Action Cell (SLAC) as a school-based mechanism for sustained, context-rich teacher learning. The policy frames LAC/SLAC as a primary vehicle for continuous professional development that emphasizes peer collaboration, classroom-focused reflection, lesson modelling, and use of learner data to improve instruction at the school level (DepEd, 2016). For example, studies examining teachers' experiences in SLAC sessions reveal that while many mathematics teachers report gains in collaborative learning and professional growth, the depth of engagement and actual impact on classroom practice can differ depending on implementation quality and teacher buy-in (Dilay & Ramos, 2024). At the same time, students' perceptions of their mathematics learning, including how teachers' attitudes, teaching approaches, and classroom environment contribute to motivation and engagement, remain critical yet underexplored outcomes of such teacher development initiatives. A recent study of student

perceptions in Philippine schools found that teacher attitudes were among the most influential factors students identify as affecting their mathematics performance, underscoring the importance of affective and relational dimensions in mathematics learning (Padawag, 2025). These intertwined teacher and student variables present an urgent problem for school leaders aiming to assess whether SLACs are fulfilling their dual purpose: improving teaching quality and enhancing student learning experiences, especially in core subjects like mathematics, where attitudes and perceptions strongly influence achievement.

Understanding teacher attitudes toward SLAC and student perceptions toward mathematics is justified for several reasons. First, SLACs are intended not simply as routine requirements but as sustained professional learning communities that aid teachers in addressing instructional gaps and strengthening pedagogical practices; qualitative findings affirm that SLAC participation deepens teaching effectiveness, supports the exchange of instructional strategies, and fosters professional collaboration (Culajara, 2023). Second, evidence from multiple Philippine settings indicates that SLAC implementation positively correlates with aspects of teacher professional competence, yet variability in implementation fidelity suggests that attitudes toward SLAC including perceived relevance, motivation to participate, and the alignment of SLAC activities with teacher needs may mediate its effectiveness (Antiola & Ferenal, 2024). Third, considering students' perceptions of mathematics, recent research highlights that positive mathematics classroom experiences often align with teachers' instructional quality and relational practices; for instance, strong teaching skills and teacher responsiveness are associated with greater student interest and self-concept in mathematics (Silvosa, & Salimaco, 2025). Together, these strands of evidence justify the need to examine both teachers' attitudes and students' perceptions within a single school framework, as doing so can reveal key levers for school improvement that remain hidden when these elements are studied in isolation.

### A. Objectives of the Study

This study aimed to determine the effect of the school learning action cell on learning and motivation in mathematics

among junior high school students at Catarman National High School.

Specifically, this study aimed to:

1. determine the profile of the students in terms of:
  - 1) age;
  - 2) gender;
  - 3) daily allowance;
  - 4) grade level;
2. ascertain the teachers' attitude towards the school learning action cell;
3. ascertain the students' learning and motivation in mathematics;
4. find out if there is a significant relationship between the profile of the students and students' learning and motivation in mathematics; and
5. find out if there is a significant relationship between the teachers' attitude towards the school learning action cell and students' learning and motivation in mathematics.

By investigating the relationship between teachers' attitudes toward SLAC and students' perceptions of mathematics, this study is expected to contribute meaningfully to school management assessment and improvement. Firstly, the findings can offer diagnostic indicators for school heads to assess SLAC quality beyond compliance metrics; if positive teacher attitudes and high levels of SLAC engagement correspond with more favorable student perceptions of mathematics, these constructs could be embedded into school performance scorecards as actionable indicators of instructional leadership and professional learning health. Secondly, empirical evidence linking SLAC participation with student perceptions will provide evidence-based guidance for leadership actions, for instance, prioritizing facilitation training, protected collaboration time, and reflective practice tracking, thereby helping school managers allocate resources and coaching support where they most impact on teaching and learning. Finally, centering student perceptions alongside teacher attitudes expands the assessment lens of school management to include affective and motivational dimensions of learning, which are increasingly recognized as predictors of long-term student outcomes in mathematics; recent studies indicate that students' self-concept and interest, influenced by teachers' instructional quality, significantly shape engagement and achievement trajectories. (SIlvosa & Salimaco, 2025). Collectively, these contributions can enrich how school leaders evaluate the effectiveness of teacher professional development initiatives like SLAC and align them more closely with improved student learning experiences.

## 2. Materials and Methods

The descriptive study was conducted among 17 junior high mathematics teachers and 344 junior high students from grades 7-10 of Catarman National High School, enrolled in the school year 2025-2026. The number is further classified into grade levels: 102 for grade 7, 98 for grade 8, 78 for grade 9, and 66 for grade 10. The respondents answered a three-part question: For teachers (1) Profile, (2) Attitudes of the Mathematics Teacher

Towards School Learning Action Cell, (3) open-ended question (What can you say more about the school learning action cell? For students' (1) Profile, (2) Students' perception in mathematics, (3) open-ended question (What can you learn more about learning math in class?) The first part is answered in demographic response, part 2 in scales response, and part 3 is perceptual response. The study used frequency counts, weighted mean, percentages, and multiple regression as statistical tools.

## 3. Result And Discussion

### A. Profile of the Students

#### 1) Age

Age distribution profile of the students		
Age	F	%
21 and above	0	0.00
18 – 20	10	2.91
15 – 17	189	54.94
12 – 14	145	42.15
11 and below	0	0.00
<b>Total</b>	<b>344</b>	<b>100.00</b>

The distribution of students by age is presented in Table 1. Most respondents fall within the 15–17 age group (54.94%), followed by those aged 12–14 (42.15%). No respondents are 11 and below or 21 and above. This confirms that the sample consists primarily of adolescents typically enrolled in secondary school. The study reports that the majority of senior high school students fell within the 15–17 age bracket, which is consistent with the typical age range for secondary education (Umpar et al., 2025)..

#### 2) Gender

Gender distribution profile of the students		
Sex	F	%
Female	198	57.56
Male	146	42.44
<b>Total</b>	<b>344</b>	<b>100</b>

The gender distribution (Table 2) shows that female students constitute the majority (57.56%), while males account for 42.44%. This aligns with national data indicating higher female participation in secondary education in the Philippines. According to the Philippine Statistics Authority (PSA) has recent official data shows that female students tend to outnumber male students at the secondary level, with higher female participation in secondary education in the Philippines, from the key points 2024 *Fact Sheet on Women and Men in the Philippines* published by PSA Education Statistics by Gender (2022–2023 / as of January 2024) Secondary (Grade 7–12) net enrollment rate females: 87.3% and Males: 81.1%. This indicates a higher proportion of girls is enrolled in secondary education compared to boys in the same period.

#### 3) Daily Allowance

As shown in Table 3, most students (64.83%) receive a daily allowance of ₱0–₱50. Only a small proportion receive ₱101 and above. The data indicate that the majority of students have limited financial resources for school-related expenses. This

finding is consistent with the study of (Moneva, 2019), which reported that many Filipino secondary school students come from low-income households and subsist on minimal daily allowances. Moneva emphasized that limited financial resources can affect students' access to learning materials, transportation, and other academic necessities, potentially influencing their school engagement and performance. The similarity between the present findings and Moneva's study suggests that financial constraints remain a persistent issue among secondary school learners in the Philippine context.

Table 3  
Daily allowance distribution profile of the students

Daily allowance	F	%
201 and above	3	0.87
151 - 200	7	2.03
101 - 150	15	4.36
51 - 100	96	27.91
0 - 50	223	64.83
<b>Total</b>	<b>394</b>	<b>100.00</b>

#### 4) Grade Level

Table 4  
Grade Level Distribution Profile of the Students

Grade Level	F	%
Grade 10	66	19.19
Grade 9	78	22.67
Grade 8	98	28.49
Grade 7	102	29.65
<b>Total</b>	<b>394</b>	<b>100.00</b>

The grade-level distribution in Table 4 reveals the highest enrollment in Grade 7 (29.65%) and the lowest in Grade 10 (19.19%). This pattern mirrors national trends of decreasing

retention as learners progress to higher grade levels. Magallanes (2025) found that student engagement and retention at junior high school (Grades 7–10) in a Filipino context are affected by support programs and resource allocation. The study reports that insufficient resources are correlated with lower engagement and retention tendencies, which can contribute to declining participation as students' progress through higher grades. This supports the pattern you observed, where later grades (like Grade 10) have lower retention/enrollment percentages compared to Grade 7.

#### B. Teachers' Attitude Toward School Learning Action Cell (SLAC)

The result in Table 5 shows a Positive Attitude toward SLAC (grand mean = 3.598). Teachers strongly agree that SLAC enhances reflective practice, as shown by the highest mean (4.87) in the statement on becoming more reflective. Conversely, the lowest mean (2.07) indicates concerns about scheduling convenience. This suggests that while teachers acknowledge SLAC's professional value, logistical aspects require improvement.

#### C. Teachers' Response to Open-Ended Question

Teachers' qualitative responses reveal perceived benefits and challenges of SLAC. Many appreciate its support for differentiated instruction, collaboration, and resource sharing. Others express concerns about scheduling, overly theoretical topics, and a lack of follow-up implementation. These comments reinforce the quantitative findings in Table 5, highlighting SLAC's professional value alongside areas needing refinement.

Table 5  
Teachers' attitude towards school learning action cell

Statements	Mean	Interpretation
The SLAC sessions help improve my teaching practices.	4.57	Very Positive Attitude
I believe SLAC contributes significantly to my professional development.	3.68	Positive Attitude
SLAC discussions help me better understand the curriculum.	3.87	Positive Attitude
I find SLAC sessions relevant to the challenges I face in the classroom.	3.98	Positive Attitude
The strategies learned in SLAC apply to my daily teaching.	2.68	Neutral/Moderate Attitude
SLAC encourages collaboration among teachers.	2.89	Neutral/Moderate Attitude
I feel comfortable sharing my ideas in SLAC meetings.	4.06	Positive Attitude
SLAC strengthens my relationship with my colleagues.	3.81	Positive Attitude
I feel motivated by the support I receive from co-teachers during SLAC.	2.98	Neutral/Moderate Attitude
SLAC provides a safe environment for teachers to express their concerns.	2.91	Neutral/Moderate Attitude
SLAC sessions are well-planned and organized.	3.75	Positive Attitude
The topics discussed in SLAC are aligned with school priorities.	4.08	Positive Attitude
The time allotted for SLAC meetings is sufficient.	3.12	Neutral/Moderate Attitude
SLAC facilitators provide clear guidance during sessions.	4.08	Positive Attitude
I find the schedule of SLAC meetings convenient.	2.07	Negative Attitude
I actively participate in SLAC activities.	3.01	Neutral/Moderate Attitude
I feel engaged during SLAC discussions.	3.13	Neutral/Moderate Attitude
I am willing to share my classroom experiences in SLAC.	4.16	Positive Attitude
I make an effort to apply what I learn from SLAC.	4.65	Very Positive Attitude
I look forward to attending future SLAC sessions.	3.02	Neutral/Moderate Attitude
SLAC helps me improve student learning outcomes.	3.99	Positive Attitude
The techniques shared in SLAC help me address learners' diverse needs.	4.07	Positive Attitude
SLAC sessions help me become more reflective about my teaching.	4.87	Very Positive Attitude
SLAC encourages me to develop innovative teaching strategies.	4.00	Positive Attitude
I have observed improvements in my classroom performance because of SLAC.	3.69	Positive Attitude
I believe SLAC is a valuable professional learning system.	2.98	Neutral/Moderate Attitude
SLAC boosts my confidence as a teacher.	3.01	Neutral/Moderate Attitude
I am satisfied with the SLAC sessions conducted in my school.	3.15	Neutral/Moderate Attitude
I feel SLAC plays an important role in school improvement.	3.65	Positive Attitude
I appreciate the opportunity to learn from my colleagues during SLAC.	4.03	Positive Attitude
<b>Mean</b>	<b>3.598</b>	<b>Positive Attitude</b>

#### D. Comments

##### 1) Theme 1: Instructional Usefulness and Classroom Impact

"The SLAC session on differentiated instruction was genuinely helpful. I immediately tried one of the new strategies, and I noticed a difference in how my diverse learners responded."

##### 2) Theme 2: Collaborative Professional Learning

"We need more inter-subject collaboration. For example, elementary teachers working with Grade 7 teachers to align expectations for student readiness."

##### 3) Theme 3: Active and Experiential Learning Approaches

"Instead of just listening to a lecture, we should incorporate micro-teaching where one teacher demonstrates a technique, and the rest of us provide immediate feedback."

##### 4) Theme 4: Resource Sharing and Efficiency

"The shared resources from SLAC—worksheets, assessment tools, and sample lessons—save me time."

##### 5) Theme 5: Reflective Practice and Professional Growth

"SLAC encourages reflective practice; I become more aware of what works and what needs improvement."

##### 6) Theme 6: Workload and Scheduling Challenges

"Honestly, it often feels like an added burden on a Friday afternoon when we're all exhausted. If the topic isn't relevant to my subject, it feels like a waste of time."

##### 7) Theme 7: Sustainability and Follow-Through Issues

"I feel like we spend all this time learning a new strategy, but there's no follow-up or monitoring to see if we actually implement it, so the motivation fades quickly."

##### 8) Theme 8: Relevance and Practicality of SLAC Content

"The topics are often too generic or focused on high-level educational theories. I wish we could spend more time on practical lesson planning and assessment."

"SLAC sometimes becomes too theoretical and not connected to real classroom problems."

"Some sessions feel disconnected from actual student needs and performance data."

#### E. Students' Perception towards Mathematics

Students demonstrate a High level of learning and motivation (grand mean = 3.476) as shown in Table 6. They strongly agree that Mathematics is important in real life (4.81) and that teachers motivate them to perform well (4.68). However, the lowest-rated item (2.04) indicates difficulty in completing challenging Math tasks, suggesting low perseverance despite high recognition of Math's relevance. Findings reflect strong value beliefs toward Mathematics, but limited persistence in difficult tasks. Studies from (Campanilla, 2024) and Jumangit & Miranda, 2025) similarly note that high motivation contributes to performance, but perseverance depends on factors like self-efficacy and instructional support.

#### F. Students' Response to Open-Ended Question

Students' qualitative feedback highlights their enjoyment of problem-solving, a preference for games and real-life applications, and the benefits of group work and visual strategies. Challenges mentioned include fast-paced lessons, difficulty with formulas, and loss of confidence after mistakes. These insights complement quantitative findings in Table 6, particularly the low ratings related to confidence and

Table 6  
Students' perception towards mathematics

Statements	Mean	Interpretation
I enjoy learning Mathematics.	3.04	Moderate
I look forward to my Math classes.	3.15	Moderate
I am interested in learning new Math concepts.	3.18	Moderate
I enjoy solving Math problems even outside of class.	2.45	Low
Mathematics is one of the subjects I like the most.	2.65	Moderate
I feel confident when solving Math problems.	2.89	Moderate
I believe I can understand difficult Math lessons.	2.05	Low
I can perform well in Math if I put in enough effort.	3.98	High
I am not easily discouraged when I struggle with Math.	2.87	Moderate
I feel confident participating during Math discussions.	4.13	High
I exert effort to understand Math lessons.	4.01	High
I study Math regularly, not just before exams.	3.08	Moderate
I try to complete my Math tasks even when they are difficult.	2.04	Low
I practice solving Math exercises to improve my skills.	3.89	High
I look for additional resources to help me learn Math better.	4.65	Very High
I believe Math is important in real life.	4.81	Very High
Learning Math will be useful for my future career.	3.65	High
I think Math helps develop problem-solving skills.	3.06	Moderate
I value Mathematics because it helps me think logically.	3.68	High
I believe that learning Math will benefit me in daily life.	4.05	High
I understand the explanations given by my Math teacher.	3.98	High
My Math teacher motivates me to do well in the subject.	4.68	Very High
The activities in my Math class help me learn effectively.	3.80	High
I feel comfortable asking questions in Math class.	3.37	Moderate
My classmates and teacher help create a positive environment for learning Math.	4.02	High
I am motivated to improve my performance in Math.	3.87	High
I try my best to get good grades in Math.	3.75	High
I feel proud when I solve challenging Math problems.	2.92	Moderate
I believe that doing well in Math is important to me.	3.45	High
I put effort into understanding Math because I know it will help me in the future.	3.12	Moderate
<b>Mean</b>	<b>3.476</b>	<b>High</b>

Table 7  
Test of the relationship between the profile and students' perception towards mathematics

Profile	Correlation	Level of Relationship	Sig. (2-tailed)	Interpretation
Age	-0.046	Negligible Correlation	0.457	Not Significant
Gender	0.059	Negligible Correlation	0.381	Not Significant
Daily allowance	0.036	Negligible Correlation	0.606	Not Significant
Grade Level	0.039	Negligible Correlation	0.058	Not Significant

Table 8

Test of the relationship between the teachers' attitude in the school learning action cell and students' perception towards mathematics

Variable	Correlation	Level of Relationship	Sig. (2-tailed)	Interpretation
Teachers' Attitude Towards School Learning Action Cell	0.526	Moderate Correlation	0.0327	Significant

persistence. Taken together, the findings highlight a comprehensive narrative: students' motivation in mathematics is shaped far more by instructional quality and teacher attitudes than by demographic differences. The significant relationship between teacher engagement in SLAC and student motivation suggests that strengthening professional learning systems can have direct benefits on learners' academic behavior. Meanwhile, the discrepancy between students' high appreciation of mathematics and low persistence on challenging tasks emphasizes the need for instructional approaches that build confidence and sustained effort (Pilo, 2025).

#### G. Comments

##### 1) Code 1(Students' feelings of enjoyment, satisfaction, and motivation)

"I like solving problems because it feels good when I get the right answer."

##### 2) Code 2 (Perceptions of fun, relevance, and meaningful activities)

"Our math class is fun when there are games or real-life examples."

##### 3) Code 3(Perceived benefits of collaboration and peer explanations)

"Group activities help me understand better because my classmates explain things in simpler ways."

##### 4) Code 4 (Perceptions of teaching methods that support understanding)

"I understand more when the teacher uses visuals, drawings, or manipulatives."

##### 5) Code 5 (Perceived challenges related to teaching speed and explanations)

"Sometimes the teacher goes too fast or doesn't explain enough."

"The lessons feel too fast, and I can't keep up."

Code 6(Perceptions of difficulty, anxiety, and confusion)

"Once I make one mistake, everything else goes wrong."

"There are too many formulas to memorize."

"Math is too hard; I don't understand the steps."

#### H. Relationship Between Student Profile and the Students' Perception in Mathematics

The correlation results in table 7 indicate negligible relationships between students' profiles (age, gender, daily allowance, grade level) and their perception. All significance values exceed  $P = .05$ , indicating that none of the demographic variables significantly influence students' perception towards mathematics. This result is consistent with Ulum (2025), who found that demographic variables do not strongly predict

mathematical identity. Instead, teacher-related factors exert a stronger influence, emphasizing the importance of instructional quality.

#### I. Relationship Between Teachers' Attitude in SLAC and Students' Perception Towards Mathematics

Table 8 reveals a moderate correlation ( $r = 0.526$ ) between teachers' attitudes toward SLAC and students' perception towards mathematics, with a significance value of  $P = .0327$ , indicating a statistically significant relationship. The findings suggest that positive teacher attitudes and active engagement in SLAC contribute meaningfully to students' perception and learning outcomes in mathematics. This supports the findings of Enriquez *et al.* (2025), who observed that supportive teacher attitudes enhance learners' engagement and academic performance.

## 4. Conclusion

It is recommended that school management utilize the findings of this study as a basis for assessing the effectiveness of School Learning Action Cell (SLAC) implementation as a key component of instructional leadership and professional development. School heads may systematically evaluate teachers' engagement, attitudes, and outcomes of SLAC sessions and integrate these indicators into school performance and instructional supervision frameworks. By aligning SLAC activities with school improvement plans and monitoring their influence on students' perceptions of mathematics, school management can make data-driven decisions to strengthen professional collaboration, enhance teaching quality, and promote a positive learning environment, thereby contributing to more effective and responsive school management.

## References

- [1] M. Antioja and E. Ferenal, "Impact of school learning action cell program on teachers' instructional competence in Misamis Oriental: Basis for professional development plan," *Amer. J. Arts Human Sci.*, vol. 3, no. 3, pp. 116–149, 2024.
- [2] S. Baquiran *et al.*, "Cohort survival of the K to 12 student entrants towards the development of strategic interventions supportive to CBEA-MMSU programs," *International Journal for Multidisciplinary Research*, vol. 6, no. 5, pp. 1–16, Sep.–Oct. 2024.
- [3] C. J. Culajara, "Improving teachers' professional development through school learning action cell (SLAC)," *J. Res., Policy Pract. Teachers Teacher Educ.*, vol. 13, no. 1, pp. 76–88, 2023.
- [4] M. Deala and E. Lopez, "School learning action cell (SLAC) implementation and its impact on the personal and professional development of elementary teachers," *Psych Educ.*, vol. 21, no. 3, pp. 253–265, 2024.
- [5] Department of Education (DepEd), *DepEd Order No. 35, s. 2016: The Learning Action Cell as a K to 12 Basic Education Program School-*

Based Continuing Professional Development Strategy for the Improvement of Teaching and Learning. Pasig City, Philippines: DepEd, 2016. [Online]. Available: <https://www.deped.gov.ph/2016/06/07/do-35-s-2016-the-learning-action-cell-as-a-k-to-12-basic-education-program-school-based-continuing-professional-development-strategy-for-the-improvement-of-teaching-and-learning/>

[6] M. Enriquez *et al.*, "Multivariate analysis: Teachers' attitudes, students' interests, intrinsic motivation on students' learning outputs," *Normal Lights*, vol. 18, no. 2, 2024.

[7] E. Dilay and A. Ramos, "Teachers' experiences in school-based learning action cell (LAC) sessions in Oriental Mindoro National High School," *J. Policy Planning*, vol. 1, no. 1, p. 18, 2024.

[8] K. Erfe *et al.*, "School learning action cell (SLAC) implementation and its impact on the professional development of Araling Panlipunan teachers," *Int. J. Multidiscip. Res.*, 2024.

[9] K. A. Madrilejos, "Structural equation model of students' interest, motivation, self-efficacy, persistence, and perceived teaching quality in mathematics," *J. Interdiscip. Perspect.*, vol. 3, no. 3, pp. 260–273, 2025.

[10] C. M. Magallanes, "School support and resource allocation: Input to the enhancement of junior high school student retention at Barobaybay Academy-Mission School, Inc., Philippines," *Asian Res. J. Arts Soc. Sci.*, vol. 23, no. 9, 2025.

[11] J. Moneva, "Students' level of financial support satisfaction towards their daily allowance," *IRA Int. J. Educ. Multidiscip. Stud.*, vol. 16, no. 1, pp. 15–23, 2019.

[12] M. D. Padawag, "Student perception on the factors influencing their math performance in Bokod, Benguet, Philippines," *J. Educ., Learn., Manag.*, vol. 2, no. 2, pp. 242–262, 2025.

[13] Philippine Statistics Authority (PSA) and ICF, 2022 *Philippine National Demographic and Health Survey (NDHS): Final Report*. Quezon City, Philippines and Rockville, MD, USA: PSA and ICF, 2023.

[14] M. Pilo, "Learning action cell sessions: Enhancing classroom instruction in the new face-to-face classes," *Int. J. Innov. Sci. Res. Technol.*, vol. 9, no. 7, Jul. 2024.

[15] B. Sales, "Exploring the learning action cell implementation and its challenges in public elementary schools," *Technoarete Trans. Adv. Soc. Sci. Human.*, vol. 4, no. 1, Mar. 2024.

[16] H. Silvosa and R. Salimaco Jr., "The impact of teachers' pedagogical content knowledge and students' self-concept on mathematics interest among junior high school students," *Asian J. Educ. Soc. Stud.*, vol. 51, no. 7, pp. 377–386, 2025.

[17] C. Sumbilla *et al.*, "Collaborative learning action cell (CLAC) mentoring program to self-efficacy of out-of-field senior high school teachers," *Indonesian J. Soc. Sci.*, vol. 14, no. 2, pp. 73–78, Jul.–Dec. 2022.

[18] S. Uwitonze and H. O. Andala, "Effect of teachers' attitudes towards teaching on students' performance in mathematics in public day secondary schools (Huye District)," *Afr. J. Empirical Res.*, 2024.

[19] H. Ulum, "Understanding Turkish students' mathematical identity: Mathematics achievement, beliefs, attitudes and motivation," *STEM Educ.*, vol. 5, no. 1, pp. 89–108, 2025.

[20] Umpar *et al.*, "The academic performance of SHS students in a private school in Cavite using online learning and face-to-face learning modalities: A comparative study," *Psych Educ.*, vol. 38, no. 6, pp. 646–658, 2025.