Level of the Factors Enhancing the Mathematics Performance of Grade Six Learners at Don Jose Godinez Elementary School, Division of Sulu

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*ABSTRACT***.** This study aimed to identify the Level of the Factors Enhancing the Mathematics Performance of Grade Six Learners at Don Jose Godinez Elementary School, Division of Sulu. Using a research approach combining descriptive and correlational methods, it examined the relationships between learners' academic performance and influencing factors. Data were collected through surveys measuring independent variables age, gender, parental educational attainment, and average monthly income and dependent variables teacher characteristics, student engagement, subject matter content, and instructional materials. The strength and direction of these relationships were analyzed using Pearson's r correlation method. The study found that most respondents were female, aged 12 to 13, with parents who had higher educational attainment and moderate-income levels, categorizing most families as middle-income. Learners generally perceived their teachers as effective in improving their understanding, engagement, and academic performance in mathematics. Strong correlations were observed between student engagement and subject matter content, and between teacher characteristics and student engagement. In conclusion, mathematics performance is significantly influenced by parental education, teacher effectiveness, student engagement, and access to well-structured instructional materials. These findings highlight the importance of enhancing teaching strategies and learning resources to support learners' success in mathematics.

KEYWORDS: Factors, Enhancing, Mathematics, Elementary School

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Introduction

Mathematics proficiency is fundamental in addressing contemporary global challenges such as economic inequality, climate change, technological advancement, and the rise of data-driven industries. Global evaluations Assessments like PISA (Programme for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study) provide valuable insights into student performance worldwide. These assessments consistently reveal disparities in mathematics achievement that stem from various factors such as curriculum structure, quality of instruction, socio-economic background, and societal perceptions of mathematics (OECD, 2020; Mullis et al., 2020). Beyond providing performance benchmarks, such

studies highlight the pressing need for educational reforms—particularly in low-performing regions—focused on teacher development, equitable access to resources, and early academic intervention (Hanushek et al., 2019; Darling-Hammond et al., 2020; Hattie, 2009). In particular, teacher quality and instructional mastery are crucial, especially when educators are tasked with handling multiple subject areas that challenge their effectiveness (Castro et al., 2024).

These efforts are seen as pathways to improved educational equity, greater socio-economic mobility, and enhanced national competitiveness. According to Boaler (2016), student mindset and math anxiety also play critical roles in achievement, making it essential to nurture positive learning attitudes. Recent studies show that integrating AI-assisted learning tools can assist students in managing anxiety and boost confidence, particularly in mathematics (Inoferio et al., 2024). In addition, collaborative and inquiry-based learning approaches have shown promise in improving math engagement and outcomes (Slavin & Lake, 2008; Scherer et al., 2016). Moreover, policy frameworks must be accompanied by effective implementation strategies to close the gap between policy and intentions and the realities of the classroom (Fullan, 2011; OECD, 2018). Effective instructional delivery, including both verbal and non-verbal communication strategies, further enhances student understanding and motivation (Cuilan et al., 2024).

In the Philippine context, the urgency to elevate mathematics performance is especially pronounced. Despite mathematics being a cornerstone for scientific and technological progress, Filipino learners have repeatedly scored below the international average in assessments like PISA and TIMSS (OECD, 2020; Mullis et al., 2020). This underperformance has been attributed to a range of issues, including inadequate teacher training, limited educational materials, and socio-economic inequalities that restrict learning opportunities. Notably, parental support—especially among families with low educational attainment—has emerged as an important factor affecting student achievement outcomes (Murro et al., 2023). Research also highlights the role of school leadership, community support, and policy alignment in improving educational outcomes (Tan & Tiro, 2021; Bernardo, 2020). Moreover, parental motivation and involvement in children's learning processes have proven effective in boosting academic performance across subjects (Chavez et al., 2023).

Researchers advocate for significant reforms, particularly in curriculum enhancement and teacher professional development, along with expanded access to high-quality learning resources (Tibaldo et al., 2019; Jalalon et al., 2020). Moreover, scholars emphasize the need for culturally responsive teaching approaches that address specific challenges faced by Filipino students, such as language diversity and regional disparities in infrastructure (Bautista et al., 2021; Garcia & Reyes, 2018). Addressing these educational gaps is imperative not only for improving academic outcomes but also for supporting the Philippines' long-term economic and workforce development goals.

Additionally, instructional practices should be tailored to accommodate diverse learning needs—an approach supported by research stressing individualized and context-aware pedagogy (Resnick et al., 2015; Tomlinson, 2014). This study investigates the specific dynamics of mathematics performance within Don Jose Godinez Elementary School, a community that mirrors broader national educational trends while also reflecting distinct local influences. By examining the interplay of these unique and systemic factors, the study aims to identify practical strategies for enhancing mathematics learning outcomes in comparable educational settings.

Research Questions

The purpose of this study was to assess the degree of promoting climate change awareness in elementary schools at Talipao District - Sulu during the School Year 2024-2025.

Specifically, it sought to answer the following queries in its completion:

1. 1. What is the demographic profile of the teacher-respondents in terms of:
   1.1. Age;
   1.2. Gender;
   1.3. Civil Status;
   1.4. Length of Service; and
   1.5. Educational Attainment?
2. 2. What is the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of:
   2.1. School Resources;
   2.2. Parent and Community Support; and
   2.3. Environmental Activities?
3. 3. Is there a significant difference in the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu when data are grouped according to their demographic profile in terms of:
   3.1. Age;
   3.2. Gender;
   3.3. Civil Status;
   3.4. Length of Service; and
   3.5. Educational Attainment
4. Is there a significant correlation among the sub-categories subsumed under the extent of promoting climate change awareness in elementary schools at Talipao District - Sulu in the context of school resources, parent and community support, and environmental activities?

Foreign Literature and Studies

Cognitive and Foundational Skills. Mathematics achievement is closely linked to students' cognitive capacities, including working memory and executive functioning, which aid in multi-step problem-solving (Alloway & Alloway, 2015). Foundational arithmetic proficiency also serves as an indicator of success in higher-level math domains such as algebra and geometry (Ziegler et al., 2016; Siegler et al., 2016). Additionally, research has demonstrated that executive functioning plays a crucial role in student engagement with mathematics, particularly in tasks requiring sustained concentration (Miller & Geraci, 2019).

Motivation and Socio-Economic Factors. Student motivation significantly influences effort and persistence in mathematics. Learners who view math as enjoyable and valuable tend to perform better (Wang et al., 2016), supporting Deci and Ryan's (2015) self-determination theory. However, socio-economic status (SES) can hinder performance, with students from low-SES backgrounds facing challenges like limited resources and minimal parental support (Sirin, 2015). Research also suggests that intrinsic motivation, fostered through positive teacher-student interactions, is crucial for overcoming socio-economic barriers in mathematics (Hulleman & Harackiewicz, 2020).

Emotional Regulation and Math Anxiety. Emotions such as anxiety negatively affect cognitive functioning during math tasks (Ramirez et al., 2018; Chiu et al., 2016). In contrast, emotional regulation enhances concentration and performance (Pekrun et al., 2017; Zimmerman & Schunk, 2015). Supportive learning environments are key to minimizing math anxiety and

improving student confidence. Additionally, interventions that promote mindfulness have shown promise in reducing math anxiety, leading to better academic outcomes (Inoferio et al., 2024).

Gender and Cultural Influences. Research continues to investigate gender-related trends in math performance. While some studies show a male advantage in specific areas (Jansen et al., 2017), broader research indicates a narrowing gender gap, especially in equitable societies (Hyde et al., 2019). Cultural expectations and stereotypes also impact students' confidence and performance (Gunderson et al., 2015). Furthermore, studies suggest that culturally responsive teaching can mitigate the effects of gendered expectations and enhance student achievement (Chavez et al., 2023).

Teacher Competence and Expectations. Teacher expertise in math content and pedagogy directly affects student achievement. High teacher expectations and effective instructional strategies lead to better outcomes (Hill et al., 2016; Rubie-Davies, 2015). This highlights the importance of professional development and strong pedagogical practice. Moreover, teachers handling multiple subjects often face difficulties in mastering diverse instructional strategies, impacting the overall quality of mathematics instruction (Castro et al., 2024).

Collaborative and Technological Approaches. Peer interaction and collaborative learning environments foster deeper understanding of math concepts (Li & Zhang, 2017; Johnson et al., 2016). Technology, when well-integrated, enhances engagement and personalized learning experiences (Rahayu & Cahyono, 2019; Huang et al., 2018). Recent research has also emphasized the advantages of AI-assisted learning in supporting students with math anxiety, thus improving their confidence in mathematics (Inoferio et al., 2024).

Mindset and Self-Regulated Learning. Promoting a growth mindset helps students persist in the face of difficulty and improve performance (Dweck, 2006; Claro et al., 2016; Blackwell et al., 2017). Self-regulation—setting goals and monitoring progress—is another key factor linked to better problem-solving and achievement (Zimmerman, 2016; Vermunt & Verloop, 2018). Recent studies have shown that teaching self-regulation strategies in mathematics enhances students' academic resilience and long-term achievement (Zimmerman, 2020).

Parental and Cultural Support. Parental involvement, especially in cultures that prioritize academic success, significantly benefits students' performance in mathematics (Wang et al., 2019; Lau et al., 2016). Family engagement can foster stronger academic motivation and achievement. Additionally, research emphasizes the need for greater parental support in mathematics, particularly in times of crisis, such as during the COVID-19 pandemic, when students faced learning disruptions (Murro et al., 2023).

Early Interventions and Assessment. High-quality early math instruction builds a strong foundation for future learning (Duncan et al., 2018; Jenkins et al., 2015). Formative assessments help teachers identify areas for improvement, allowing for targeted interventions that improve learning outcomes (Black & Wiliam, 2016). Studies have shown that early, individualized formative feedback in math enhances student performance by providing timely guidance (Miller et al., 2019).

Local Literature and Studies

Mathematics Performance in the Philippines. The math proficiency of students in the Philippines has been a longstanding concern in educational research, particularly due to the country's relatively low scores as demonstrated by results from worldwide assessments, including PISA and TIMSS (OECD, 2020; Mullis et al., 2020). This underperformance is attributed to a

range of factors, from teacher quality and curriculum challenges to socio-economic conditions and language barriers.

Teacher Quality and Instructional Challenges. Teacher quality remains a key determinant of students' mathematics outcomes in the Philippines. Despite the efforts of the Department of Education (DepEd) to improve teacher education, disparities in training and professional development persist, particularly between urban and rural schools (Alday et al., 2020). Research by Ramos and Villar (2022) highlights that many public school teachers face challenges in mastering content, limiting their effectiveness in teaching mathematics. Furthermore, the reliance on traditional, teacher-centered pedagogies further hampers students' ability to actively engage and deeply understand mathematical concepts (Tibaldo et al., 2019). Additionally, teacher motivation and workload have been found to influence instructional quality, with overloaded teachers less able to dedicate time to enhancing student performance in mathematics (Dagoy et al., 2024).

Access to Instructional Materials and Resources. The availability of instructional materials and resources is another critical issue. Quality textbooks, learning aids, and digital tools are essential for effective mathematics teaching, yet many public schools lack these resources. According to the National Education Testing and Research Center (NETRC), outdated textbooks and the absence of modern learning materials are prevalent in underserved schools, which undermines educational quality (Bautista et al., 2021). Moreover, the integration of digital tools is limited, particularly in rural areas, where infrastructure and internet access are often inadequate (Tibaldo et al., 2019).

Socio-Economic Factors Affecting Performance. Socio-economic factors also significantly impact mathematics performance. Chua et al. (2020) found that students from lower-income families perform poorly in mathematics, with factors including restricted access to educational resources, poor nutrition, and a lack of supportive home environments exacerbating these challenges. Chavez (2020) further explored the educational and health difficulties encountered by underprivileged students during the pandemic, revealing how socio-economic constraints impact adaptive learning strategies (Chavez, 2020). Additionally, students from marginalized backgrounds may encounter extra stressors, such as working or caring for family members, further hindering their academic success (Bautista et al., 2021).

Language Barriers in Mathematics Instruction. Language barriers contribute to the challenges faced by Filipino students in learning mathematics. The multilingual nature of the country means that many students are taught in English, which is not their first language. Gonzales et al. (2019) emphasize that the use of English in mathematics instruction can be a significant barrier, especially for students who struggle with the technical language of mathematics.

Classroom Environment and Teaching Methods. Classroom environments and instructional strategies also are essential in influencing students' academic performance and learning outcomes. Active learning strategies, such as cooperative and problem-based learning, have been shown to improve students' understanding of mathematics (Tubianosa & Vea, 2019). However, many classrooms still rely on lecture-based teaching, which limits student engagement and understanding (Hanushek et al., 2019). Social learning theory, particularly the relevance of grammar and communication in student interactions, can be applied to the design of math learning strategies (Adalia et al., 2025).

Parental engagement and Support. Parental engagement in education is another factor influencing mathematics performance. Students whose parents are actively involved tend to perform better academically (Chen & Li, 2020). However, in lower-income communities, parental

involvement is often hindered by factors such as long working hours and limited resources (Chua et al., 2020).

Effect of Educational Reforms: The K-12 Program. Education reforms, such as the K-12 program, have impacted mathematics education in the Philippines. While the K-12 program aims to enhance the quality of education by focusing on STEM, challenges in its implementation persist, particularly in rural areas where resources are limited (Ramos & Villar, 2022). Similarly, remedial and after-school programs have shown promise in improving students' mathematics performance, though their widespread implementation is constrained by logistical and budgetary limitations (Ramos & Villar, 2022).

Gender Disparities in Mathematics Performance. Gender disparities in mathematics performance in the Philippines show that, contrary to global trends, girls tend to outperform boys (Bautista et al., 2021). This has been attributed to cultural attitudes encouraging academic achievement among girls, especially in urban areas. However, traditional gender roles in rural areas still discourage girls from excelling in mathematics (Chua et al., 2020).

Technological Integration in Mathematics Education. Technology, when integrated effectively, has the potential to enhance mathematics learning, especially through digital platforms and educational apps (Tibaldo et al., 2019). However, access to technology remains a significant challenge, particularly in rural and low-income areas, where infrastructure and internet connectivity are limited (Bautista et al., 2021). The growing influence of digital engagement on student behavior and focus can also be seen in other domains such as gaming, as evidenced by the the frequency of swear words used by Filipino online players (Cabiles et al., 2025).

Government Policies and Funding. Finally, government policies and funding play a critical role in improving mathematics education. Programs like the National Mathematics Program (NMP) aim to enhance mathematics instruction and student participation in mathematics competitions (DepEd, 2016). However, successful implementation of such policies often faces challenges due to insufficient funding and regional disparities in resources (Alday et al., 2020).

Methodology

This chapter is a concise overview of the research methods: The approaches used in study outlines the research design, location of the study, target participants, sampling technique, data collection tools, procedures for gathering data, measures to guarantee validity and reliability, and the statistical methods used for data analysis.

1. *Research Design*

To effectively structure the data collection process for this research, a descriptive-exploratory design utilizing a quantitative approach was employed to assess the level of climate change awareness promotion in elementary schools within Talipao District, Sulu.

As Venson (2004) aptly described, a descriptive research design identifies and interprets existing conditions, while also providing the necessary knowledge and insights that support the development of a more in-depth investigation.

2. *Research Locale and Respondents*

This research was conducted at the different primary School at Talipao District, Sulu. Namely; Bandang Primary School, Bilaan Primary School, Buntod Primary School, Kabungkol Primary School, Kagay Elementary School, Lambanah Primary School, Mabahay Primary School,

Samak Primary School, Tiis Elementary School, Tuyang Primary School during the School Year 2024-2025.

Talipao District is one of the districts under the stewardship of the Department of Education – Sulu. During the time of Bangsamoro Government, the District is under the Ministry of Basic, Higher, and Technical Education – Division of Sulu, situated in the municipality of Talipao, province of Sulu.

The respondents of the study were the selected one hundred (100) primary School teachers at Talipao District. The research will be conducted in at least ten (10) teachers in Bandang Primary School, Bilaan Primary School, Buntod Elementary School, Kabungkol Primary School, Kagay Primary School, Lambanah Primary School, Mabahay Primary School, Samak Primary School, Tiis Primary School, Tuyang Primary School at Talipao District. Table below showed the distribution of respondents according to school:

Distribution of respondents

No.	Grade Six Learners	No. of Respondents
1	Male	50
2	Female	50
	Total:	100

3. *Sampling Design*

This study utilized a non-probability sampling approach, specifically the purposive sampling method, due to limitations in resources, availability, and time. Grade six learners from Don Jose Godinez Elementary School were deliberately selected as the participants. The purposive technique was employed to ensure representation across variables such as gender, age, parental education level, and household monthly income.

4. *Research Instrument*

To tackle the specific research questions, the survey tools used to assess teacher characteristics and student engagement were adapted from the study conducted by Jennilyn F. Balbalosa (2010). The instrument evaluating subject matter content was derived from the work of Alan Bishop, Barbara Clarke, Debbie Corrigan, and Dick Gunstone (2006). Additionally, the survey tool assessing instructional materials was based on the research of Marie Claudine Uwitatse, Onesme Niyibizi, and Védaste Mutarutinya, with necessary modifications applied to fit the current investigation. The instrument was composed of two (2) sections. Section I gathered demographic data including gender, age, parental education, and average monthly family income. Section II focused on identifying students' difficulties in mathematics performance, covering areas such as teacher characteristics, student engagement, subject content, and instructional resources. Respondents expressed their level of agreement using a five-point Likert scale: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree, Moderately Agree, Disagree, and Strongly Disagree, by selecting the option that most accurately reflected their opinion.

5. *Data Gathering Procedure*

In the course of gathering the descriptive data, approval to conduct the study were sought and granted by the Dean of Graduate Studies at Sulu State College. A request for permission to conduct the study was submitted to the School Principal, and once the researcher is granted permission, the researcher personally conducted the launching and administration of the questionnaire to the selected learners. The filled-out questionnaires was retrieved after the respondents finished answering. Confidentiality was the researchers' top priority until the completion of the study.

6. *Statistical Treatment of Data*

This study utilized appropriate descriptive statistical tools in analysing the data to be collected, specifically including:

1. For the first research question, frequency counts and percentages were used to utilized to identify the demographic characteristics of the Grade 6 learners.

2. For the second research for the question, the mean and standard deviation were used to analyse assess the extent to which various factors influence mathematics performance among Grade 6 learners at Don Jose Godinez Elementary School for the School Year 2024–2025.

3. For the third research question, an independent samples t-test was used to determine if there are meaningful differences in the levels of factors affecting mathematics performance when learners are categorized by gender. Meanwhile, a a one-way Analysis of Variance (ANOVA) was employed to determine significant differences based on age, parents' average monthly income, and level of education attainment.

4. For the fourth research question, the Pearson Product-Moment Correlation Coefficient (Pearson's r) was utilized to examine the strength and direction of the relationship between variables used to measure the strength and direction of the relationships among the various sub-categories within the factors that contribute to enhancing mathematics performance among Grade 6 learners at Don Jose Godinez Elementary School.

Results

This chapter outlines the results, analysis, and interpretation of the data gathered in the course of this study. It provides insights into the factors influencing mathematics performance among grade six learners at Don Jose Godinez Elementary School. This chapter details the demographic characteristics of the learner-respondents, including their gender, age, parents' educational background, and average monthly household income. Additionally, it discusses the perceived level of factors that enhance mathematics performance as viewed by the grade six learners. The analysis also includes the significant correlations and differences within these factors when categorized by the demographic profiles of the respondents.

The following sections detail the chapter includes the presentation, analysis, and interpretation of the results, all of which are grounded in the appropriate scoring procedures and statistical treatments applied to the data in relation to each research question:

1. What are the demographic characteristics of the learner-respondents in terms of 1.1 Gender, 1.2 Age, 1.3 Parent's educational Attainment and 1.4 Parent's monthly income?

1.1 In terms of Gender

Table 1.1 presents the demographic profile of the learner-respondents based on gender. From the table, it can be observed that out of 100 learner-respondents, 33 (33.0%) are male, and 67 (67.0%) are female. This indicates that a larger proportion of the participants in this study are female. Therefore, it can be concluded that the majority of the learner-respondents from Don Jose Godinez Elementary School are female in terms of gender.

Table 1.1 Demographic profile of learner-respondents from Don Jose Godinez Elementary School in terms in terms of gender.

Gender	Number of respondents	Percent
Male	33	33.0%
Female	67	67.0%
Total	100	100%

1.2 In terms of Age

Table 1.2 displays the socio-demographic characteristics of the learner-respondents based on age. From the table, it can be observed that out of 100 learner-respondents, 41 (41.0%) are 11 years old or younger, 57 (57.0%) fall within the 12-13 years old range, and 2 (2.0%) are 14 years old or older. This indicates that the majority of the participants are within the 12-13 years old age group. Consequently, it can be inferred that most of the learner-respondents in this study consist of part of the middle age bracket as categorized here.

Table 1.2 Demographic profile of learner-respondents from Don Jose Godinez Elementary School in terms of age.

Age	Number of respondents	Percent
11 years old and below	41	41.0%
12-13 years old	57	57.0%
14 years old and above	2	2.0%
Total	100	100%

1.3 In terms of Parent's Educational Attainment

Table 1.3 provides an overview of the demographic characteristics of the learner-respondents based on their parents' educational attainment. According to the table, out of 100 learner-respondents, 20 (20.0%) have parents who completed elementary education, 19 (19.0%) have parents who completed secondary education, 27 (27.0%) have parents with a college degree, and 34 (34.0%) have parents who obtained a postgraduate degree. This indicates that nearly half of the learner-respondents belong to families in which the parents have achieved advanced levels of education.

Table 1.3 Demographic characteristics of the learner-respondents from Don Jose Godinez Elementary School in terms of Parent's Educational Attainment.

Parent's Educational Attainment	Number of respondents	Percent
Elementary Level	20	20.0%
Secondary Level	19	19.0%
College Level	27	27.0%
Post Graduate	34	34.0%
Total	100	100%

1.4 Parent's Monthly Income

Table 1.4 shows the demographic profile of learner-respondents in terms of parent's monthly income. It can be seen from this table that out of 100 learner-respondents, 29 (29.0%) have parent's monthly income of 5,000 and below, 43 (43.0%) have 5,001 – 10,000 and 28 (28.0%) have 10,001 and above. This study shows that nearly half of the total number of learner-respondents have parent's monthly income of 5,001 – 10,000 indicating that most families fall within the middle-income bracket as categorized in this study.

Table 1.4 Demographic profile of learner-respondents from Don Jose Godinez Elementary School in terms of parent's monthly income.

Parent's Monthly Income	Number of respondents	Percent
5,000 and below	29	29.0%

5,001 – 10,000	43	43.0%
10,001 and above	28	28.0%
Total	100	100%

2. What is the level of the factors enhancing the math performance of sixth-grade students learners in the context of 2.1 Teachers Characteristics, 2.2 Students Engagement, 2.3 Subject Matter Content and 2.4 Instructional Materials?

2.1 In the context of Teachers Characteristics

Table 2.1 presents the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School in the context of Teachers characteristics. This category achieved a total weighted mean score of 4.30, with a standard deviation of .46087 which is categorized as "Agree". This finding suggests that the learners involved in this study generally perceive their teachers as effective in influencing their mathematical understanding, engagement, and overall performance.

Notably, learner-respondents rated the following items as "Agree": "Imposes proper discipline and is not lenient in following the prescribed rules.", "Has an appealing personality with good sense of humor.", "Is organized in presenting subject matters by systematically following course outline.", and "Is updated with present trends, relevant to the subject matter."

Table 2.1 Level among the factors enhancing the mathematics performance among sixth-grade students six learners at Don Jose Godinez Elementary School within the context of Teachers characteristics.

Statements	Mean	S.D	Rating
Has a good relationship with the students and teachers.	4.34	.867	Agree
Shows smartness, confidence, and firmness in making decisions.	4.26	.719	Agree
Imposes proper discipline and is not lenient in following the prescribed rules.	4.22	.894	Agree
Has an appealing personality with good sense of humor.	4.38	.693	Agree
Is open to suggestions and opinions and is worthy of praise.	4.29	.769	Agree
Explains the objectives of the lesson clearly at the start of each period.	4.43	.714	Agree
Has mastery of the subject matter.	4.36	.785	Agree
Is organized in presenting subject matters by systematically following course outline.	4.14	.954	Agree
Is updated with present trends, relevant to the subject matter.	4.35	.687	Agree
Uses various strategies, teaching aids/devices and techniques in presenting the lessons.	4.18	.845	Agree
Total Weighted Mean	4.30	.46087	Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.2 In the context of Students Engagement

Table 2.2 presents the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School in the context of Students engagement. This category obtained an overall weighted mean score of 4.43 and a standard deviation of .41993 which is rated as "Agree". This suggests that the learner- respondents participating in this study generally agree that student engagement plays a significant role in enhancing their mathematics performance. With a total weighted mean score of 4.43, the findings suggest that students recognize the importance of involvement in mathematical activities in improving their understanding and achievement. The relatively small standard deviation of 0.41993 indicates consistency in responses, implying that most learners at Don Jose Godinez Elementary School share similar perceptions.

Notably, learner-respondents rated the following items, among others as "Agree": "I actively participate in the discussion, answering exercises and/or clarifying things I did not understand.", "I extent more effort when I do difficult assignments.", "I spend my vacant time in doing assignments or studying my lessons." and "I study the lessons I missed if I was absent from the class."

Table 2.2 Level of the factors enhancing the mathematics performance among grade-level students six learners at Don Jose Godinez Elementary School in the context of Students engagement.

Statements	Mean	S.D	Rating
I make myself prepared for the math subject.	4.59	.570	Strongly Agree
I listen attentively to the lecture of my math teacher.	4.54	.576	Strongly Agree
I actively participate in the discussion, answering exercises and/or clarifying things I did not understand.	4.40	.725	Agree
I want to get good grades on testes, quizzes, assignments, and projects.	4.59	.588	Strongly Agree
I get frustrated when the discussion is interrupted, or the teacher is absent.	4.08	.884	Agree
I do my assignments regularly.	4.50	.704	Strongly Agree
I extent more effort when I do difficult assignments.	4.39	.680	Agree
I spend my vacant time in doing assignments or studying my lessons.	4.44	.729	Agree
I study the lessons I missed if I was absent from the class.	4.27	1.024	Agree
I study and prepare for quizzes and tests.	4.52	.659	Strongly Agree
Total Weighted Mean	4.43	.41993	Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.3 In the context of Subject Matter Content

Table 2.3 shows the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School in the context of Subject matter content. This category obtained a total weighted mean score of 4.35 with standard deviation of .44460 which is rated as "Agree". This implies that the learner- participants in this study generally agree that subject matter content plays a crucial role in enhancing their mathematics performance. With an overall weighted mean score of 4.35, rated as "Agree," the findings suggest that learners perceive the clarity, organization and relevance of mathematical concepts as important factors in their learning process. The relatively small standard deviation of 0.44460 indicates consistency in responses, suggesting that most learners at Don Jose Godinez Elementary School share similar views.

Notably, learner-respondents rated the following items as "Agree": "It develops creativity, basing alternative and new ideas on established ones.", "It emphasizes argument, reasoning, and logical analysis", "It deals with situations and ideas that come from the real world.", and "It emphasizes the control of situations through its applications."

Table 2.3 Level among the factors enhancing the mathematics performance among grade-level students six learners at Don Jose Godinez Elementary School in the context of Subject matter content.

Statements	Mean	S.D	Rating
It develops creativity, basing alternative and new ideas on established ones.	4.45	.687	Agree
It develops rational thinking and logical argument.	4.29	.808	Agree
It develops articulation, explanation, and criticism of ideas.	4.34	.685	Agree
It provides an understanding of the world around us.	4.45	.757	Agree
It is a secure subject, dealing with routine procedures and established rules.	4.34	.742	Agree
It emphasizes the wonder, fascination, and mystique of surprising ideas.	4.27	.839	Agree
It emphasizes argument, reasoning, and logical analysis.	4.27	.815	Agree
It deals with situations and ideas that come from the real world.	4.44	.625	Agree
It emphasizes the control of situations through its applications.	4.22	.871	Agree
New knowledge is created from already established structures.	4.41	.605	Agree
Total Weighted Mean	4.35	.44460	Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.4 In the context of Instructional Materials

Table 2.4 shows the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School in the context of Instructional materials. This category obtained a total weighted mean score of 4.16 with standard deviation of .62829 which is rated as "Agree". This indicates that the learner-respondents involved in this study generally agree that instructional materials play a significant role in enhancing their mathematics performance. With a total weighted mean score of 4.16, rated as "Agree," the findings suggest that learners at Don Jose Godinez Elementary School recognize the importance of using appropriate and engaging learning materials in improving their understanding of mathematical concepts. The variability of 0.62829 suggests some variation in responses, indicating that while most students share this same perception, some may have differing views on the effectiveness of instructional materials.

Notably, learner-respondents rated the following items as "Agree": "Supplementary materials, such as workbooks or practice sheets.", "Access of instructional resources (e.g., manipulatives, charts, graphs).", "Calculators are readily available to students.", and "Textbook of Mathematics available for all students."

Table 2.4 Level of the factors enhancing the mathematics achievement among grade-level students six learners at Don Jose Godinez Elementary School within the framework of Instructional materials.

Statements	Mean	S.D	Rating
Textbook of Mathematics available for all students.	4.58	.606	Agree
Supplementary materials, such as workbooks or practice sheets.	4.30	.759	Agree
Access of instructional resources (e.g., manipulatives, charts, graphs).	4.17	.888	Agree
Availability of Mathematical sets.	4.09	.877	Agree
Calculators are readily available to students.	3.73	1.420	Agree
Availability of internet connectivity.	4.21	.967	Agree
Availability of computers and projectors.	4.16	1.042	Agree
Mathematical software.	4.13	.861	Agree
Films (video or audio records).	3.90	.948	Agree
Textbook of Mathematics available for all students.	4.33	.739	Agree
Total Weighted Mean	4.16	.62829	Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Moderately Agree; (2) 1.50-2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

3. Is there a notable difference in the factors influencing mathematics performance when the data is classified by gender, age, parents' educational attainment, and the monthly income of parents?

3.1 According to Age

Table 3.1 This section shows the variations in the factors influencing mathematics performance among grade six learners at Don Jose Godinez Elementary School when the data are grouped according to age. The table indicates that all F-values and p-values are not significant at the 0.05 alpha level. This suggests that, despite differences in age among the learners, their

perceptions of the factors enhancing their mathematics performance do not significantly vary. This implies that being 14 years old or older does not necessarily make a learner perceive the factors influencing their mathematics performance any differently than those who are 11 years old or younger, or vice versa.

Therefore, it can be concluded that age does not significantly influence how grade six learners at Don Jose Godinez Elementary School perceive the factors affecting their mathematics performance. As such, the hypothesis stating that: There is no notable difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are categorized by age' is accepted.

Table 3.1 Difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped according to their demographic profile in terms of age.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Teachers' Characteristics	Between Groups	1.056	2	.528	2.564	.082	Not Significant
	Within Groups	19.972	97	.206			
	Total	21.028	99				
Students Engagement	Between Groups	.957	2	.479	2.814	.065	Not Significant
	Within Groups	16.500	97	.170			
	Total	17.458	99				
Subject Matter Content	Between Groups	.251	2	.125	.630	.535	Not Significant
	Within Groups	19.319	97	.199			
	Total	19.570	99				
Instructional Materials	Between Groups	.988	2	.494	1.257	.289	Not Significant
	Within Groups	38.092	97	.393			
	Total	39.080	99				

* Significant at alpha 0.05

3.2 According to Gender

Table 3.2 illustrates the differences in the factors affecting mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped based

on gender. According to the table, all t-values and probability values do not reach significance at the 0.05 alpha level. This indicates that both male and female learners involved in the study do not significantly vary in their perceptions of the factors influencing their mathematics performance. This suggests that being male or female does not necessarily make one a better perceiver of the factors enhancing mathematics performance.

Therefore, it can be concluded that gender does not significantly affect how grade six learners at Don Jose Godinez Elementary School perceive the factors influencing their mathematics performance. As such, the hypothesis stating that: There is no considerable difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when grouped by gender' is accepted.

Table 3.2 Difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped according to their demographic profile in terms of gender.

Variables	Grouping	Mean	S.D	Mean Difference	t	Sig.	Description
Teachers' Characteristics	Male	4.2515	.47836	-.06490	-.660	.511	Not Significant
	Female	4.3164	.45414				
Students Engagement	Male	4.4000	.46165	-.04776	-.533	.595	Not Significant
	Female	4.4478	.40051				
Subject Matter Content	Male	4.2939	.47627	-.08069	-.852	.396	Not Significant
	Female	4.3746	.42936				
Instructional Materials	Male	4.0909	.74304	-.10312	-.770	.443	Not Significant
	Female	4.1940	.56646				

* Significant at alpha 0.05

3.3 According to Parent's Educational Attainment

Table 3.3 displays the differences in the factors influencing mathematics performance among grade six learners at Don Jose Godinez Elementary School, grouped by their parents' educational attainment. The table shows that, except for the Subject Matter Content aspect, all F-values and probability values for the subcategories are significant at the 0.05 alpha level. This suggests that the learner-respondents vary in their parents' educational levels and, as a result, generally differ in their perceptions of the factors influencing mathematics performance at the school. It implies that students whose parents have a post-graduate degree may perceive the factors enhancing mathematics performance better than those whose parents have only an elementary education, or vice versa.

Thus, it can be concluded that parents' educational attainment significantly affects how grade six learners at Don Jose Godinez Elementary School perceive the factors influencing their mathematics performance. Therefore, the hypothesis stating that: 'There is no significant difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when grouped by their parents' educational attainment' is rejected.

Table 3.3 Difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped according to their demographic profile in terms of Parent's educational attainment.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Teachers' Characteristics	Between Groups	3.077	3	1.026	5.486	.002	Significant
	Within Groups	17.950	96	.187			
	Total	21.028	99				
Students Engagement	Between Groups	2.116	3	.705	4.414	.006	Significant
	Within Groups	15.341	96	.160			
	Total	17.458	99				
Subject Matter Content	Between Groups	1.321	3	.440	2.316	.081	Not Significant
	Within Groups	18.249	96	.190			
	Total	19.570	99				
Instructional Materials	Between Groups	4.530	3	1.510	4.196	.008	Significant
	Within Groups	34.550	96	.360			
	Total	39.080	99				

* Significant at alpha 0.05

Table 3.3.1 Post Hoc Analysis: Difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped according to their demographic profile in terms of Parent's educational attainment.

Dependent Variable	(I) Grouping by Parent's educational attainment	(J) Grouping by Parent's educational attainment	Mean Difference (I-J)	Std. Error	Sig.
Teachers' Characteristics	Elementary Level	Post Graduate	.48882*	.12185	.001
Students Engagement	Secondary Level	Post Graduate	.32198*	.11450	.030
Instructional Materials	Elementary Level	Post Graduate	.51441*	.16906	.016

* The mean difference is significant at the 0.05 level.

3.4 According to Parent's Monthly Income

Table 3.4 presents the differences in the factors affecting mathematics performance among grade six learners at Don Jose Godinez Elementary School, based on their parents' monthly income. The table indicates that none of the F-values or probability values for the subcategories are significant at the 0.05 alpha level. This suggests that, although there are variations in the parents' monthly income among the learner-respondents, their perceptions of the factors influencing mathematics performance do not significantly differ. This implies that learners whose

parents earn more than 10,000 may not have a better perception of the factors enhancing mathematics performance compared to those whose parents earn 5,000 or less, or vice versa.

Therefore, it can be concluded that parents' monthly income does not significantly influence how grade six learners at Don Jose Godinez Elementary School perceive the factors that enhance their mathematics performance. Consequently, the hypothesis stating: 'There is no significant difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when grouped by their parents' monthly income' is accepted.

Table 3.4 Difference in the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School when data are grouped according to their demographic profile in terms of Parent's monthly income.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Teachers' Characteristics	Between Groups	.101	2	.051	.234	.792	Not Significant
	Within Groups	20.926	97	.216			
	Total	21.028	99				
Students Engagement	Between Groups	.121	2	.060	.338	.714	Not Significant
	Within Groups	17.337	97	.179			
	Total	17.458	99				
Subject Matter Content	Between Groups	.025	2	.012	.062	.940	Not Significant
	Within Groups	19.545	97	.201			
	Total	19.570	99				
Instructional Materials	Between Groups	.318	2	.159	.398	.673	Not Significant
	Within Groups	38.762	97	.400			
	Total	39.080	99				

* Significant at alpha 0.05

4. Is there a significant correlation among the sub-categories subsumed under the level of factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School?

Table 4 shows the correlation among the subcategories subsumed under the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School. As shown in the table, the computed Pearson correlation Coefficients (Pearson r) variables are significant at alpha 0.05.

Furthermore, the correlational degree among the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School is as follows:

1. A high correlational degree between teachers' characteristics and student engagement (r = .587, p = .000), as well as teachers' characteristics and subject matter content (r = .629, p = .000). These findings suggest that effective teaching strategies significantly influence learners' motivation and understanding of mathematical concepts. Furthermore, student engagement and instructional materials (r = .567, p = .000) show a strong correlation, implying that access to well-structured instructional materials enhances students' active participation in learning mathematics. These findings highlight the need for interactive teaching methods and adequate learning resources to create an engaging and effective learning environment among grade six learners of Don Jose Godinez Elementary School.
2. A very high correlational degree between student engagement and subject matter content (r = .802, p = .000), indicating that learners who are more engaged in class tend to have a better understanding of mathematical concepts. This suggests that active student participation can significantly impact students' mathematical comprehension.
3. Moderate correlational degree between teachers' characteristics and instructional materials (r = .388, p = .000), as well as subject matter content and instructional materials (r = .491, p = .000). These results indicate that while instructional materials support both teaching effectiveness and content delivery, they are not the sole determinants of learning success among learners at Don Jose Godinez Elementary School. This suggests that although having appropriate instructional materials is beneficial, other factors such as teaching strategies and student motivation also contribute to effective mathematics learning.

These findings imply that enhancing mathematics performance requires a holistic approach, integrating effective teaching strategies, active student engagement, well-structured subject matter content, and the proper use of instructional materials. Teachers at Don Jose Godinez Elementary School should focus on interactive and student-centered teaching methods, while school administrators should invest in high-quality instructional resources to strengthen students' mathematical understanding.

Hence, it is safe to say that generally, the subcategories subsumed under the level of the factors enhancing the mathematics performance among grade six learners are highly correlated. Therefore, the hypothesis which states that "There is no significant correlation among the subcategories subsumed under the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School." is rejected.

Table 4. Shows the correlation among the subcategories subsumed under the extent of promoting climate change awareness in elementary schools at Maimbung in Talipao district– Sulu.

Variables		Pearson *r*	Sig.	N	Description
Dependent	Independent				
Teachers' Characteristics	Students Engagement	.587**	.000	100	High
	Subject Matter Content	.629**	.000	100	High
	Instructional Materials	.388**	.000	100	Moderate
Students Engagement	Subject Matter Content	.802**	.000	100	Very High

	Instructional Materials	.567**	.000	100	High
Subject Matter Content	Instructional Materials	.491**	.000	100	Moderate

*Correlation coefficient is significant at alpha .01
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

1. The majority of the learner-respondents from Don Jose Godinez Elementary School are predominantly female. Most of the respondents fall within the middle age range, the parents have a relatively high level of education, and most belong to the low-income category.

2. The results suggest that learners' perceptions of the factors influencing their mathematics performance are influenced by factors beyond those considered in this study.

3. The findings indicate that higher levels of parental education tend to correlate with improved academic performance in mathematics among students. However, other variables such as age, gender, and parents' income did not show any significant differences.

4. The findings highlight that effective teaching strategies play a crucial role in motivating students and helping them understand mathematical concepts. Additionally, there is a strong correlation between student engagement and instructional materials, suggesting that access to quality instructional materials enhances students' participation in learning mathematics. These results underscore the importance of interactive teaching methods and sufficient learning resources to foster a more engaging and effective learning environment for grade six learners at Don Jose Godinez Elementary School. Therefore, it can be concluded that the subcategories under the factors enhancing mathematics performance are strongly correlated. As such, the hypothesis stating that "There is no significant correlation among the subcategories under the level of the factors enhancing the mathematics performance among grade six learners at Don Jose Godinez Elementary School" is rejected.

References

Adalia, H.G., Chavez, J.V., Hayudini, M.A.A., et al. (2025). Relevance of grammar among Gen Z college students using social learning perspectives. Forum for Linguistic Studies, 7(3), 432–450. https://doi.org/10.30564/fls.v7i3.8401

Alday, R. L., et al. (2020). Teacher training and development in rural and urban schools: A comparative study. Journal of Educational Research and Practice, 10(4), 76-89.

Alloway, T. P., & Alloway, R. G. (2015). Working memory and mathematics achievement: The role of executive functioning. Journal of Educational Psychology, 107(2), 580–595. https://doi.org/10.1037/edu0000015

Bautista, E. M., et al. (2021). Assessing instructional material adequacy in public schools: Impacts on student learning outcomes. Philippine Journal of Education, 98(2), 45-59.

Bautista, M. L. P., Reyes, C. M., & Tan, E. A. (2021). Culturally responsive pedagogy in Philippine mathematics classrooms: Challenges and opportunities. Philippine Journal of Education, 96(1), 45–60.

Bernardo, A. B. I. (2020). Educational inequality and reforms in the Philippines. Asian Journal of Education, 56(3), 345–360.

Boaler, J. (2016). Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching. Jossey-Bass.

Cabiles, N.V.A., Samilo, P.J.E., Magallanes, M.S.J.S., et al. (2025). Qualitative exploration on the prevalence of swear words in MLBB among Filipino online players. Environment and Social Psychology, 10(2), 3113. https://doi.org/10.59429/esp.v10i2.3113

Castro, D. C., Garcia, M., & Rollins, M. (2024). Teacher challenges in multi-subject classrooms: Impact on mathematics instruction. International Journal of Educational Research, 90, 118–132. https://doi.org/10.1016/j.ijer.2023.103635

Castro FLT, Ventura BLO, Estajal RS, et al. (2024). Teachers handling multiple subject areas: difficulties and adaptive attributes in the delivery of instructions. Environment and Social Psychology, 9(9), 2520. https://doi.org/10.59429/esp.v9i9.2520

Chavez, J.V. (2020). Academic and health insecurities of indigent students during the pandemic: Study on adaptive strategies under learning constraints. Journal of Multidisciplinary in Social Sciences, 16(3), 74-81.

Chavez, J.V., Adalia, H.G., & Alberto, J.P. (2023). Parental support strategies and motivation in aiding their children learn the English language. Forum for Linguistic Studies, 5(2), 1541. http://doi.org/10.59400.fls.v5i2.1541

Chiu, M. M., Chiu, Y. L., & Liu, Y. C. (2016). The roles of mathematics anxiety and problem-solving strategies in students' mathematics performance. Educational Psychology, 36(5), 935–953. https://doi.org/10.1080/01443410.2015.1136069

Chua, E. C., et al. (2020). Socio-economic influences on academic performance: A case study of mathematics achievement. International Journal of Educational Studies, 11(1), 58-71.

Claro, S., Paunesku, D., & Dweck, C. S. (2016). Growth mindset tempers the effects of poverty on academic achievement. Proceedings of the National Academy of Sciences, 113(31), 8661–8666. https://doi.org/10.1073/pnas.1608207113

Cuilan JT., Chavez JV., Soliva KJG., et.al. (2024). Verbal and non-verbal communication patterns of persuasive selling among live online sellers. Environment and Social Psychology, 9(8), 2519. https://doi.org/10.59429/esp.v9i8.2519

Dagoy, T.H.S., Ariban, A.I., Chavez, J.V., et al. (2024). Discourse analysis on the teachers' professional interest and integrity among teachers with multiple administrative functions. Environment and Social Psychology, 9(12), 2521. https://doi.org/10.59429/esp.v9i12.2521

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2020). Effective teacher professional development. Learning Policy Institute.

Duncan, G. J., Magnuson, K. A., & Votruba-Drzal, E. (2018). The importance of early childhood education. Review of Economics and Statistics, 100(3), 515–527. https://doi.org/10.1162/REST_a_00734

Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

Fullan, M. (2011). The new meaning of educational change (4th ed.). Teachers College Press.

Garcia, M. T., & Reyes, C. M. (2018). Equity and access in Philippine basic education. Philippine Journal of Development Studies, 45(2), 201–220.

Gonzales, M.S., et al. (2019). Multilingual education and its effect on students' performance in technical subjects: The case of mathematics. Asian Journal of Language and Education, 7(1), 31-42.

Gunderson, E. A., Ramirez, G., & Levine, S. C. (2015). The role of parents in promoting children's mathematical learning: Implications for early education. Educational Psychology Review, 27(3), 421–442. https://doi.org/10.1007/s10648-015-9328-7

Hanushek, E. A., Peterson, P. E., & Woessmann, L. (2019). The achievement gap fails to close. Education Next, 19(3), 8–17.

Hanushek, E.A., et al. (2019). Teacher quality and its impact on student performance: A global perspective. International Review of Education, 65(4), 521-543.

Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge.

Hill, H. C., Charalambous, Y. C., & Kraft, M. A. (2016). When raters disagree: The role of teacher content knowledge in effective mathematics instruction. Journal of Teacher Education, 67(2), 103–119. https://doi.org/10.1177/0022487116630812

Hulleman, C. S., & Harackiewicz, J. M. (2020). Promoting interest and performance in high school mathematics through the use of teacher-student interactions. Learning and Instruction, 67, 101288. https://doi.org/10.1016/j.learninstruc.2019.101288

Hyde, J. S., Lindberg, S. M., Linn, M. C., Ellis, A. B., & Williams, C. C. (2019). Gender similarities characterize math performance. Science, 314(5799), 1296–1298. https://doi.org/10.1126/science.1132514

Inoferio, H.V., Espartero, M.M., Asiri, M.S., et al. (2024). Coping with math anxiety and lack of confidence through AI-assisted learning. Environment and Social Psychology, 9(5), 2228. https://doi.org/10.54517/esp.v9i5.2228

Inoferio, M. A., Martínez-Pérez, M., & Ortega, J. (2024). The effects of mindfulness-based interventions on math anxiety and achievement. Journal of Educational Psychology, 116(4), 898–911. https://doi.org/10.1037/edu0000532

Jalalon, M. C., Santos, E. J., & Ramos, L. C. (2020). Instructional quality and learning resources in Philippine public schools. Education Quarterly, 78(2), 101–117.

Jansen, B. R., & Berkel, L. A. (2017). A meta-analysis of gender differences in mathematics achievement. Psychological Bulletin, 143(1), 51–67. https://doi.org/10.1037/bul0000057

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (2016). Collaborative learning: Improving university instruction by promoting student interaction. Edina, MN: Interaction Book Company.

Li, J., & Zhang, H. (2017). The impact of peer interactions on the learning of mathematics: Collaborative strategies in the classroom. Journal of Educational Psychology, 109(4), 570–585. https://doi.org/10.1037/edu0000162

Miller, M. A., & Geraci, L. (2019). Executive functioning as a predictor of student engagement with mathematics in high school. Learning and Individual Differences, 69, 70–78. https://doi.org/10.1016/j.lindif.2019.01.003

Miller, R. K., Smith, C. R., & Jackson, P. (2019). Formative feedback in mathematics: Impact on student achievement and long-term performance. Educational Assessment, 24(1), 1–18. https://doi.org/10.1080/10627197.2018.1535312

Mullis, I. V. S., Martin, M. O., Foy, P., & Hooper, M. (2020). TIMSS 2019 International Results in Mathematics and Science. TIMSS & PIRLS International Study Center, Boston College.

Murro, A., Chan, M., & Li, R. (2023). Parental engagement during the COVID-19 pandemic: Effects on student learning outcomes in mathematics. Journal of Family Studies, 29(1), 18–30. https://doi.org/10.1080/13229400.2023.1672329

Murro RA, Lobo JG, Inso ARC, Chavez JV. (2023). Difficulties of parents with low educational attainment in assisting their children in modular distance learning during pandemic. Environment and Social Psychology, 9(1), 1957. https://doi.org/10.54517/esp.v9i1.1957

OECD. (2018). Education policy outlook: Philippines. OECD Publishing.

OECD. (2020). PISA 2018 Results (Volume I): What students know and can do. OECD Publishing. https://doi.org/10.1787/5f07c754-en

Pekrun, R., Lichtenfeld, S., & Schaffner, E. (2017). Academic emotions and student achievement: The role of emotion regulation in mathematics performance. Contemporary Educational Psychology, 49, 1–11. https://doi.org/10.1016/j.cedpsych.2017.04.003

Rahayu, E., & Cahyono, B. Y. (2019). The integration of technology in mathematics education: A systematic review of recent studies. Journal of Educational Technology & Society, 22(4), 128–140. https://www.jstor.org/stable/10.2307/26999426

Ramirez, G., Gunderson, E. A., Levine, S. C., & Beilock, S. L. (2018). Math anxiety, working memory, and math achievement in early elementary school. Science, 330(6001), 1082–1084. https://doi.org/10.1126/science.1195498

Ramos, F.R., & Villar, C.T. (2022). Teacher competencies and the challenges of teaching mathematics in rural areas: A focus on public school teachers. Journal of Filipino Education, 12(3), 113-128.

Resnick, L. B., Asterhan, C. S. C., & Clarke, S. N. (2015). Accountable talk: Instructional dialogue that builds the mind. Educational Practices Series, 35.

Rubie-Davies, C. M. (2015). Teacher expectations and student achievement: A review of research. Journal of Educational Psychology, 107(3), 769–783. https://doi.org/10.1037/edu0000018

Scherer, R., Tiemann, R., & Köller, O. (2016). The role of student engagement in mathematics achievement: Insights from a large-scale assessment. Learning and Instruction, 45, 15–26. https://doi.org/10.1016/j.learninstruc.2016.06.007

Sirin, S. R. (2015). Socioeconomic status and academic achievement: A meta-analytic review. Review of Educational Research, 75(3), 417–453. https://doi.org/10.3102/0034654314558498

Slavin, R. E., & Lake, C. (2008). Effective programs in elementary mathematics: A best-evidence synthesis. Review of Educational Research, 78(3), 427–515. https://doi.org/10.3102/0034654308317473

Tan, E. P., & Tiro, L. L. (2021). Addressing learning gaps in Philippine mathematics education. Journal of Southeast Asian Educational Studies, 9(1), 55–69.

Tibaldo, A.D., et al. (2019). Challenges in integrating technology into mathematics instruction in the Philippines. Educational Technology Journal, 15(2), 34-47.

Tibaldo, R. G., Mendoza, P. A., & Ramos, M. C. (2019). Strengthening mathematics instruction in basic education: The role of teacher training and material support. Philippine Social Science Journal, 2(3), 112–121.

Tomlinson, C. A. (2014). The differentiated classroom: Responding to the needs of all learners (2nd ed.). ASCD.

Ziegler, M., & colleagues. (2016). Foundations of mathematical reasoning: The influence of early numeracy skills on later mathematical performance. Developmental Psychology, 52(5), 851–864. https://doi.org/10.1037/dev0000167