



# TEACHERS' PERFORMANCE AND THE MATHEMATICAL SKILLS OF GRADE 5 STUDENTS

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## ABSTRACT

Numeracy education plays a vital role in equipping students with essential life skills. This study investigated numeracy education in four Districts Daram I, Daram II, Talalora, and Villareal I during the 2023-2024 school year. Focusing on both teachers and students, the study painted a promising picture. The teaching force was young, with a majority holding Bachelor's degrees with some Master's coursework and many pursuing further education. Positive performance evaluations and high participation in local training sessions indicated a dedicated group of educators. Interestingly, the study found that enthusiasm for teaching numeracy and access to high-quality resources were more important factors than advanced math degrees for teachers. Moreover, the news was even better for students. Assessment results revealed a strong foundation in numeracy skills for the majority, with a significant portion demonstrating high proficiency. While some students required additional support, none lacked basic numeracy skills entirely. However, the study also highlighted areas for potential improvement. Attendance at higher-level professional development opportunities was lower, suggesting a need for expanded training options. Furthermore, no clear link emerged between traditional teacher performance measures (IPCRF ratings) and student achievement. This suggests that these ratings may not fully capture the complexities of effective numeracy instruction. Based on these findings, the researcher proposed several recommendations. Expanding professional development beyond local training, with a focus on innovative methods, could be highly beneficial. Creating a dedicated professional learning community (PLC) focused on numeracy would allow teachers to

share best practices and collaborate on lesson plans. Additionally, allocating a budget for acquiring high-quality resources and involving teachers in the selection process would ensure materials align with their needs and teaching styles. The study also identified areas for future investigation. The weak negative correlation between teacher age and receptiveness to new methods suggests a need to explore this dynamic further. Understanding the perspectives of teachers across age groups through focus groups or interviews could help tailor professional development to their specific needs. Finally, the study calls for examining the impact of broader school management practices on teacher performance and student achievement. Investigating factors like leadership styles, transparency, and career planning opportunities could provide valuable insights for improving the overall numeracy education environment. In conclusion, this study provided a valuable snapshot of numeracy education in these four districts. While a strong foundation exists, there's room for improvement. By implementing the proposed recommendations and conducting further research, these districts can create an even more effective learning environment for numeracy education, ultimately benefiting both teachers and students.

**Keywords:** *Numeracy education, Teacher performance, Student achievement, Professional development, Professional learning communities (PLCs), Numeracy resources, Teacher attitudes, Student numeracy skills, IPCRF ratings, School management practices, Teacher age, Innovative teaching methods*

## INTRODUCTION

The learning losses brought about by COVID-19 have severely affected educational systems globally, with numeracy among the most impacted foundational skills. In the Philippines, prolonged school closures exacerbated educational disparities, particularly in mathematics proficiency. According to UNICEF (2021), more than 80% of students in Southeast Asia, including the Philippines, experienced significant learning loss in numeracy. The absence of direct interaction with teachers hindered learners' progress, especially in developing essential number skills. This emphasizes the crucial role of teachers in numeracy development, although other factors such as pedagogical strategies, instructional resources, and learning environments are equally influential (Bayar & Ucan, 2022).

Numeracy, the ability to understand and apply numerical and mathematical concepts in real-life situations, complements literacy and underpins critical thinking and decision-making (Rothman et al., 2006; OECD, 2016). It includes interpreting data, solving problems, and applying logical reasoning in everyday life. National Numeracy (2022) describes numeracy as a vital life skill enabling individuals to make informed choices, manage finances, and participate meaningfully in society.

Research highlights that strong numeracy skills are crucial not only for individual success but also for national economic growth. According to the World Bank (2022), low foundational numeracy skills hinder economic productivity and labor market

competitiveness. Teachers, therefore, play a vital role in designing learning experiences that make math engaging and relatable to real-world contexts, which is essential in sustaining students' motivation and retention (Ha Cao Thi, 2023).

The Department of Education's Curriculum Guide (2016) outlines ambitious competencies for Grade 5 learners, covering a wide array of mathematical content areas including operations on large numbers, fractions, decimals, geometry, and statistics. However, teachers often struggle to deliver these standards effectively. Studies have shown that many elementary mathematics teachers lack deep content knowledge and pedagogical content skills, which affects the quality of instruction (SEI-DOST & MATHTED, 2011; Bautista et al., 2019).

The complexity of teaching mathematics is significantly increased by the diversity of student abilities. Educators constantly struggle to adapt instruction to meet varied learning needs, particularly in heterogeneous classrooms. Here, teachers must simultaneously address the need for foundational instruction for struggling students and provide enriching activities for advanced learners (Mojica, 2019).

Learning mathematics is a multifaceted cognitive process influenced by factors such as memory capacity, spatial reasoning, and prior knowledge (Chinn, 2013). Cognitive and emotional factors, including math anxiety and self-efficacy, also contribute significantly to students' achievement (Ramirez et al., 2018). Without targeted support and differentiated instruction, many students fall behind, particularly in numeracy.

Local data also reflect these concerns. In the Districts of Daram I, Daram II, Talalora, and Villareal I, observation reports from School Year 2020–2023 show that many Grade 5 teachers struggled to implement effective numeracy instruction, highlighting the need for enhanced pedagogical training and integration of technology.

Based on Classroom Observation Tools and Regional Memorandum No. 279, s. 2019, the results of the Enhanced Unified Numeracy Test over three years showed persistently high numbers of moderately and non-numerate learners. For instance, in School Year 2022–2023, non-numerate students still comprised more than 30% of the tested population in several districts.

It is within this context that the current study investigates the performance of teachers and the mathematical skills of Grade 5 students during School Year 2023–2024. The research aims to contribute solutions that improve instruction, support numeracy development, and close the learning gap intensified by the pandemic.

## **Research Questions**

This study determined the teachers' performance and the mathematical skills of Grade 5 students in the Districts of Daram I, Daram II, Talalora and Villareal I during the School Year 2023-2024.

Specifically, the study sought answers to the following questions:

1. What is the profile of the teacher-respondents in terms of the following:
  - 1.1 age and sex;
  - 1.2 civil status;
  - 1.3 gross monthly family income;
  - 1.4 highest educational attainment;
  - 1.5 teaching position;
  - 1.6 number of years in teaching;
  - 1.7 latest IPCRF
  - 1.8 number of relevant in-service training; and
  - 1.9 attitude toward teaching numeracy?
2. What are the factors affecting the teaching performance of the teacher-respondents on numeracy along with:
  - 2.1 teacher competence;
  - 2.2 organizational structure; and
  - 2.3 school-related factors?
3. What is the academic performance of the student-respondents in Mathematics?
4. Is there a relationship between the factors affecting the teaching performance of the teacher-respondents along the afore-cited parameters and the following:
  - 4.1 teacher's personal profile;
  - 4.2 latest IPCRF; and
  - 4.3 academic performance of Grade 5 students?
5. What intervention program may be proposed based on the findings of this study.

## **Locale of the Study**

The Figure 1-3 shows the map of the districts and schools involved in the study.



Figure 1

The Map Showing the Locale of the Study

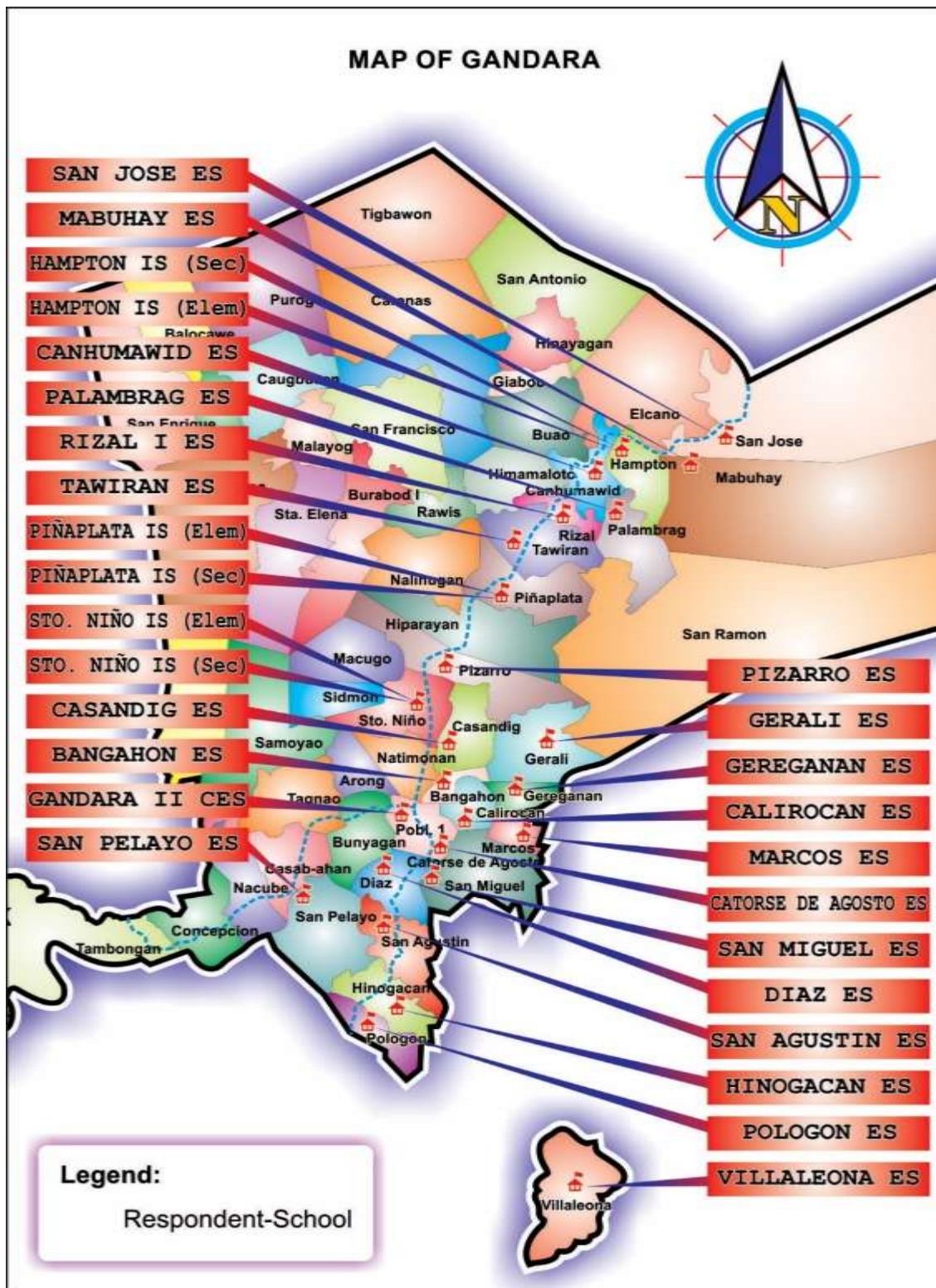
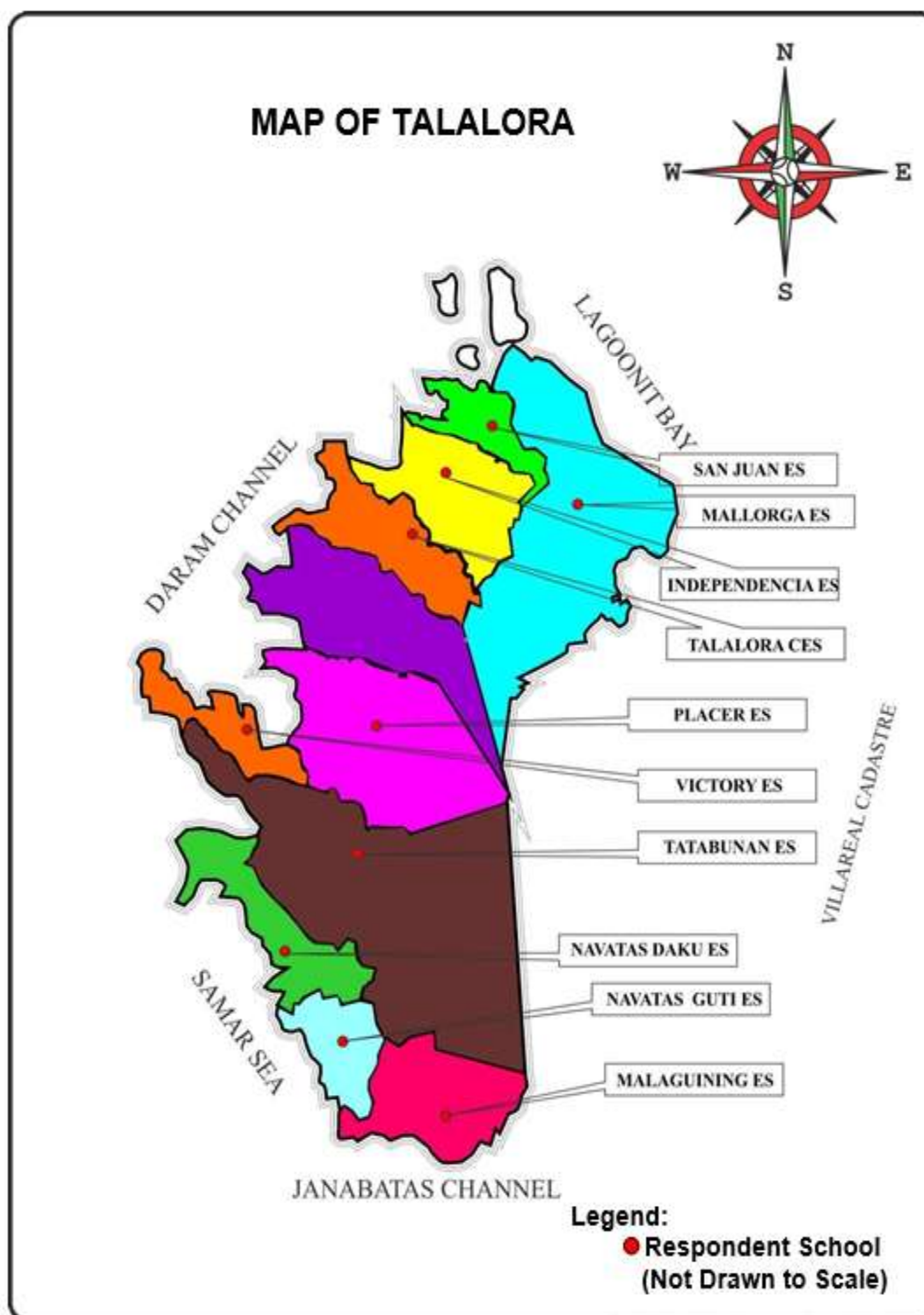


Figure 2

The Map Showing the Locale of the Study





### The Map Showing the Locale of the Study



## METHODOLOGY

This descriptive-correlation study investigated factors influencing teacher performance in numeracy, along with teacher and student profiles, utilizing a researcher-made questionnaire and existing student numeracy data. The questionnaire comprised three parts: Part I gathered demographic information (age, sex, civil status, income, education, position, years teaching, latest IPCRF, in-service training), Part II assessed attitudes toward teaching numeracy using a five-point Likert scale (Strongly Agree to Strongly Disagree), and Part III explored factors affecting teaching performance (teacher competence, organizational structure, school factors) using a Thurstone scale (Extremely Affecting to Not Affecting). The questionnaire underwent expert validation by an oral examination panel, who reviewed it for face, content, construct, pragmatic, and convergent-discriminant validity. All Grade 5 teachers from the Districts of Daram I, Daram II, Talalora, and Villareal I (totaling 100 teachers) were included as respondents through random sampling, and their students' Grade 5 Enhanced Regional Unified Numeracy Test (ERUNT) scores from the 2023-2024 school year were also incorporated. Data collection, conducted from February to March 2024, involved obtaining permission from the DepEd Schools Division Superintendent, coordinating with district supervisors and principals, and personally administering the questionnaires to achieve a 100% retrieval rate despite logistical challenges like transportation and multiple trips across the four districts. The collected data were then tabulated and processed using Microsoft Excel.

## RESULTS AND DISCUSSION

The following were the salient findings of the study:

1. This survey of teachers showed a relatively young group, with the largest portion being between 27 and 31 years old, making up 35 percent of respondents. There was a good presence of teachers in their early to mid-thirties as well, with 21 percent falling between 37 and 41 and another 20 percent between 32 and 36. The average age is 32, but the spread of ages is fairly wide at 5.74 years on either side of the average. Interestingly, there are more female teachers (71) who participated in this survey compared to males (29).

2. The survey results revealed a nearly even distribution between married and single teachers. Over half 51 percent of the respondents are married, indicating a significant portion of teachers who likely have families. However, a substantial number, nearly half 49 percent are single. It was interesting to note that there were no reported widowed teachers among the respondents.

3. The survey results indicated that a majority 51 percent of the teacher-respondents fall within the 25,000 – 29,999-peso range for gross monthly family income. This suggested that a significant portion of teachers share a similar income level. There was also a notable presence 25 percent of teachers earning between 30,000 – 34,999 pesos. The remaining teachers seem to be spread across various income brackets, with



some earning between 10,000 to 24,999 pesos and others exceeding 35,000 pesos monthly.

4. The survey results showed a strong emphasis on continuing education among the teacher-respondents. The majority 59 percent hold a Baccalaureate degree with some Master's coursework, indicating that a significant portion of teachers are invested in going beyond their bachelor's degree but haven't necessarily completed a full Master's program. Moreover, a sizeable group 21 percent holds only a Bachelor's degree. This reveals a range of educational backgrounds among the respondents. On the other end of the spectrum, there's a noteworthy presence of teachers with 16 possessing full Master's degrees, 3 with Master's degrees and additional doctoral coursework, and even 1 with the highest qualification of Ph.D. or Ed.D.

5. The survey results revealed that most teacher-respondents' 42.0 percent hold the position of Teacher III. This suggests that a substantial portion of teachers have experience and have likely been teaching for several years. Following this group are Teacher I 36.0 percent, Teacher II 13.0 percent, Master Teacher I 7.0 percent, and Master Teacher II 2.0 percent.

6. The survey results revealed a blend of experience among the teacher-respondents. Nearly half 48 percent have been teaching for 6-10 years, suggesting a core group with a solid foundation in the classroom. However, there's also a substantial portion 27 percent in the early stages of their careers, with less than 5 years of experience. The remaining teachers fall across a spectrum of experience, with 21 having 11-15 years, 3 with 16-20 years, and even 1 teacher with an impressive 26–30-year career.

7. The latest IPCRF results were very positive, revealing a high standard of performance among the teacher-respondents. The majority 66 percent scored in the 'Very Satisfactory' range (3.50 - 4.49), indicating a strong foundation in teaching practices across the group. This is a commendable achievement. Even more impressive is the substantial portion 34 percent who reached the top rating of 'Outstanding' (4.50 - 5.00). This suggests a significant number of teachers exceeding expectations and demonstrating exceptional teaching abilities.

8. The survey results shed light on teacher attendance patterns for in-service trainings at various levels. Teachers reported the highest level of participation in trainings offered by their schools, with a weighted mean of 3.80, which translates to "always" attending. District-level trainings also see a good attendance rate, with a weighted mean of 3.31, indicating teachers participate "oftentimes". However, attendance drops significantly for trainings held at division, regional, and national levels. The weighted means for these levels fall within the "sometimes" and "never" categories (2.28, 1.46, and 1.34 respectively).

9. The survey results revealed a very positive attitude towards teaching numeracy among the teacher-respondents. The overall weighted mean score is 4.75, which translates to "strongly agree." This suggests a high level of enthusiasm and commitment

to this subject area. Interestingly, the highest weighted means were for statements that emphasize the teachers' personal satisfaction derived from effective numeracy instruction. These include: "I am happy when my students learn from my teachings on numeracy" (4.84), "I love teaching numeracy" (4.82), and "I ensure that students will learn from my lessons in numeracy" (4.81). All three scores fall within the "strongly agree" range, indicating a strong connection between the teachers' own enjoyment and their students' learning. However, the two lowest weighted means, though still within the "strongly agree" range (4.66 and 4.69), were for statements related to lesson plan preparation and reporting to class on time specifically for numeracy lessons. These statements are: "I write lesson plans in numeracy every day" (4.66) and "I always report to my classes on time especially if it is on numeracy" (4.69).

10. The survey results indicate that teacher-respondents perceive several factors as having a strong impact on their numeracy teaching performance, with an overall weighted mean score of 4.15, interpreted as "highly affecting". Among these factors, the one seen as most impactful is "Preparing instructional materials for numeracy" (4.45), which falls within the "highly affecting" range. This suggests that having access to high-quality and engaging resources is crucial for teachers to effectively deliver numeracy lessons. Interestingly, the two statements with the lowest weighted means (though still within "highly affecting") are related to teacher qualifications: "Possess conceptual thinking" (3.95) and "Enroll in post-graduate studies in Mathematics" (3.98).

11. The survey results highlight that organizational structure plays a significant role in numeracy teaching performance among the teacher-respondents. The overall weighted mean score is 4.43, which is interpreted as "highly affecting." Interestingly, the aspects that teachers perceive as having the strongest impact are those that contribute to a positive and collaborative work environment. These include "Portray a friendly and positive working environment" (4.61) and "Encourage integration of technology and innovation" (4.59), both of which fall within the "extremely affecting" range. This suggests that teachers thrive in schools that foster a supportive and forward-thinking atmosphere where they can collaborate and implement innovative teaching methods. On the other hand, the two factors with the lowest weighted means, though still considered "highly affecting" (4.31 and 4.34), are related to broader school management practices: "Transparency in all school matters" and "Provision of career succession".

12. The survey results show that school-related factors are perceived by teacher-respondents as having a strong impact on their numeracy teaching performance. The overall weighted mean score is 4.32, which is interpreted as "highly affecting". Among these factors, having "Conducive classrooms for instructions" (4.67) is seen as the most impactful, falling within the "extremely affecting" range. This suggests that teachers prioritize well-equipped and comfortable classrooms to deliver effective numeracy lessons. Interestingly, the factor with the lowest weighted mean, though still considered "highly affecting" (4.12), is "The school has a functional library". While a functional library is still seen as important, the score suggests that other school-related factors might be perceived as having a more direct impact on numeracy teaching.

13. The results of the student numeracy assessment reveal a positive trend, with the majority of students 38.60 percent demonstrating proficiency in numeracy skills. This is a promising finding, indicating a strong foundation in mathematical concepts. There's also a substantial portion of students 33.43 percent who are nearly proficient, suggesting they are close to achieving full proficiency with some targeted support. Encouragingly, a significant number of students 25.53 percent are classified as highly proficient, demonstrating a strong grasp of numeracy concepts. While there is a small group 2.43 percent identified as low proficient in numeracy skills, it's important to note that there were no students who fell into the non-proficient category. This data suggests a generally strong level of numeracy skills among the student population.

14. The survey results shed light on the factors influencing teacher performance in numeracy instruction. Interestingly, only two teacher characteristics showed a statistically significant correlation with the overall performance factors (teacher competence, organizational structure, and school-related factors). These characteristics were age and attitude towards teaching numeracy. A statistically significant correlation was found between age and performance ( $p\text{-value} = 0.034$ ). However, the correlation is weak with a negative coefficient ( $-0.212$  spearman rho value). While a significant connection exists, the weak negative value suggests a complex relationship. The negative coefficient could indicate that teachers with more experience (potentially older) might be less receptive to new numeracy teaching methods. Also, a statistically significant correlation was found between teacher attitude and performance ( $p\text{-value} = 0.000$ , much stronger than the significance level of 0.05). In this case, the correlation is positive ( $0.401$  spearman rho value). This indicates a clearer connection: teachers with a more positive attitude towards teaching numeracy tend to report higher performance factors.

15. The survey results suggest a connection between teacher competence and their latest IPCRF ratings, but the relationship is weak. Statistically, the null hypothesis, which stated there is no relationship, was rejected ( $p\text{-value} = 0.013$ , lower than the significance level of 0.05). This means there is a connection between these two factors. However, the spearman rho value of 0.247 indicates a weak correlation. While some association exists, teacher competence isn't necessarily a strong predictor of high IPCRF ratings in this case. There might be other factors playing a more significant role in determining these performance evaluations.

16. The survey results did not reveal a statistically significant connection between organizational structure and teacher performance as measured by IPCRF ratings. The null hypothesis, which stated there is no relationship, was accepted because the  $p\text{-value}$  (0.080) is greater than the chosen significance level of 0.05.

17. The survey results did not find a statistically significant relationship between school-related factors and teacher performance as measured by IPCRF ratings. The null hypothesis, which proposed that there's no connection, was accepted because the  $p\text{-value}$  (0.305) is higher than the chosen significance level of 0.05.

18. The null hypothesis which states that "there is no significant relationship

between the factors affecting the teaching performance of the teacher-respondents along with teacher competence and the student-respondents' numeracy level", was accepted because the p-value (0.056) is slightly higher than the significance level of 0.05.

19. The null hypothesis which states that "there is no significant relationship between the factors affecting the teaching performance of the teacher-respondents along with organizational structure and the student-respondents' numeracy level", was accepted since the computed p-value is 0.209 which is higher than the significance level of 0.05.

20. The survey results regarding the link between school-related factors and student numeracy scores are not statistically significant. The null hypothesis which states that "there is no significant relationship between the factors affecting the teaching performance of the teacher-respondents along with school-related factors and the student-respondents' numeracy level", was accepted since the computed p-value is 0.716 which is much higher than the significance level of 0.05.

## **Conclusions**

From the findings of the study, the following conclusions were drawn:

1. The teaching staff leans young, with the largest age group being 27-31 years old. There are more female teachers (71) who participated in this survey compared to males (29). A significant portion of teachers 51 percent are married, suggesting many have families.

2. A majority of teachers 59 percent have a Bachelor's degree with some Master's coursework, indicating a strong emphasis on continuing education.

3. Most teachers hold the position of Teacher III 42 percent, suggesting experience and likely several years of teaching.

4. Nearly half 48 percent have 6-10 years of teaching experience, with a substantial portion 27 percent being new teachers with less than 5 years.

5. The IPCRF results provide compelling evidence of the high quality of teaching performance among the teacher-respondents. The majority of teachers have demonstrated a strong foundation in their teaching practices, with a significant number excelling and achieving outstanding ratings.

6. Teachers attend trainings offered by their schools most frequently, followed by district-level trainings. Attendance drops significantly for trainings held at higher levels (division, regional, and national).

7. Teachers have a very positive attitude towards teaching numeracy, with a strong emphasis on their own enjoyment and satisfaction derived from effective instruction. There seems to be slightly less agreement on statements related to lesson plan preparation and punctuality specifically for numeracy lessons.

8. Teachers highly value quality instructional materials for numeracy lessons.

9. Interestingly, teacher qualifications like advanced degrees in math were seen as less critical than resources.



10. A positive and collaborative school culture is crucial. Teachers thrive in supportive environments that encourage teamwork, innovation, and a friendly atmosphere.

11. Broader school management practices like transparency and career planning seem to have a lesser impact on numeracy teaching performance.

12. Well-equipped and comfortable classrooms are a top priority for effective numeracy instruction, while access to a functional library appears less directly impactful.

13. The student numeracy assessment results are very positive. The majority of students 38.60 percent are proficient. Encouragingly, a quarter of students demonstrate high proficiency. While a small number require additional support, there are no students entirely lacking numeracy skills. Overall, this data suggests a strong foundation in numeracy for the student population.

14. Teacher attitude towards numeracy instruction has a positive correlation with overall performance factors. This suggests that fostering a positive attitude among teachers can significantly impact their numeracy teaching effectiveness.

15. Age has a statistically significant but weak negative correlation with performance. This means a complex relationship exists, where older teachers might be less receptive to new methods. Further investigation is needed to understand this connection.

16. There was a weak correlation between teacher competence and IPCRF ratings. While some association exists, teacher competence alone may not be the strongest predictor of high-performance evaluations. Other factors likely play a more significant role.

17. The survey did not find statistically significant connections between organizational structure, school-related factors, and teacher performance as measured by IPCRF ratings. This suggests these factors may not have a direct impact on performance evaluations in this context.

18. No statistically significant relationships were found between teacher performance factors (including teacher competence, organizational structure, and school-related factors) and student numeracy levels. This means a clear link between teacher performance, as measured in this study, and student achievement in numeracy is not established.

19. The teacher's attitude towards numeracy instruction seems to be the most important teacher characteristic influencing overall performance factors. While teacher competence is important, it may not be the sole factor determining high performance evaluations. The impact of school environment (organizational structure and school-related factors) on teacher performance and student numeracy scores requires further investigation. This study highlights the need to explore additional factors that might influence teacher effectiveness and student achievement in numeracy.

### **Compliance with Ethical Standards**

The researcher demonstrated a strong commitment to ethical standards by diligently securing institutional approval for the study. This began with drafting a formal letter to the Superintendent of DepEd, Schools Division of Samar, to obtain official permission. Furthermore, the researcher personally visited the schools, engaging

directly with Public Schools District Supervisors and principals to seek their cooperation and assistance. This meticulous approach ensured that the study was conducted with the full knowledge and consent of the relevant educational authorities. While not explicitly detailed, the personal administration of the questionnaires to the respondents also implies that a process of implied informed consent was in place, allowing the researcher to communicate the study's purpose and ensure voluntary participation and data confidentiality, thereby upholding fundamental ethical principles in research.

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## **REFERENCES**

- Bautista, A., Tan, C. Y., & Wong, J. (2019). Math teachers' beliefs and practices: A cross-national study. *Teaching and Teacher Education*, 82, 107–118. <https://doi.org/10.1016/j.tate.2019.03.013>
- Bayar, A., & Ucan, S. (2022). Remote mathematics education during COVID-19: Challenges and recommendations. *International Journal of Mathematical Education in Science and Technology*, 53(6), 1480–1495. <https://doi.org/10.1080/0020739X.2021.1875072>

- Chinn, S. (2013). *The trouble with maths: A practical guide to helping learners with numeracy difficulties* (2nd ed.). Routledge.
- Curriculum Guide (2016). *Mathematics Curriculum Guide for Grade 5*. Department of Education, Philippines.
- Ha Cao Thi (2023). Making Math exciting: Teachers' strategies for engaging learners. *Southeast Asian Journal of Educational Research*, 15(2), 23–36.
- Mojica, L. A. (2019). Teachers' challenges in mathematics instruction: A qualitative study. *Philippine Journal of Education*, 97(1), 44–52.
- National Numeracy Organization. (2022). What is numeracy? <https://www.nationalnumeracy.org.uk/what-numeracy>
- OECD. (2016). *PISA 2015 Results (Volume I): Excellence and Equity in Education*. <https://doi.org/10.1787/9789264266490-en>
- Ramirez, G., Gunderson, E. A., Levine, S. C., & Beilock, S. L. (2018). Math anxiety, working memory, and math achievement in early elementary school. *Journal of Cognition and Development*, 19(1), 80–95. <https://doi.org/10.1080/15248372.2017.1421532>
- Rothman, S., et al. (2006). Literacy and numeracy skills and labor market outcomes in Australia. Australian Council for Educational Research.
- SEI-DOST & MATHTED. (2011). *The 2010 Mathematics Teacher Training Needs Study*. Department of Science and Technology.
- UNICEF. (2021). *COVID-19 and education disruption in Southeast Asia*. <https://www.unicef.org/eap/reports>
- World Bank. (2022). *Learning poverty: Measures and implications*. <https://www.worldbank.org/en/topic/education/publication>

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