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THE INFLUENCE OF STORYTELLING ON THE MATHEMATICS PERFORMANCE OF GRADE 1 PUPILS: A CORRELATIONAL STUDY

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ABSTRACT
This study examined the relationship between storytelling and the academic performance of students in mathematics. Specifically, it aimed to determine the frequency, duration, and quality of storytelling experienced by respondents, assess their mathematics achievement, and analyze the correlation between storytelling exposure and academic outcomes. The study involved 34 grade one students as the respondents, and data were collected using structured instruments measuring storytelling practices and mathematics performance. Findings revealed that storytelling is a well-integrated instructional strategy characterized by moderate frequency, brief duration, and high-quality delivery, with the majority of students participating in 11–15 sessions per week and rating storytelling as Good to Excellent. Mathematics achievement among respondents was generally high, with nearly all students scoring between 91 and 99, indicating strong academic performance. Correlation analysis showed a very strong positive and statistically significant relationship between storytelling and mathematics performance, suggesting that increased exposure to high-quality storytelling is associated with improved academic outcomes. Based on these findings, it is concluded that storytelling serves as an effective pedagogical tool that enhances engagement, motivation, and learning, particularly in mathematics, when implemented thoughtfully with appropriate frequency, duration, and quality. The study recommends that educators continue to integrate storytelling into classroom instruction, optimize its duration, and incorporate narrative-based tasks in mathematics to sustain and further improve student achievement.

KEYWORDS: *Storytelling, Academic Performance, Mathematics Achievement, Instructional Strategies, Student Engagement*

INTRODUCTION

Early mathematics education has long been recognized as a vital foundation for children's academic development and future learning success (Duncan et al., 2020; Hassinger-Das et al., 2020). In the early primary years, particularly in Grade 1, pupils are expected to develop basic numeracy skills such as number recognition, counting, comparison, and simple problem-solving (Casey et al., 2020; Reyes & Reyes, 2025). These foundational competencies are essential not only for later achievement in mathematics but also for the development of logical thinking, reasoning, and everyday decision-making skills (Nicolopoulou et al., 2021). However, despite the importance of early numeracy, many Grade 1 pupils continue to demonstrate low mathematics performance, weak conceptual understanding, and difficulty in applying mathematical ideas meaningfully (Lu & Fu, 2025).

Mathematics is often perceived by young learners as abstract and challenging, especially when instruction relies heavily on traditional teaching approaches such as rote memorization, repetitive drills, and symbol manipulation without sufficient context (Almusharraf, 2021). Such approaches frequently overlook the developmental characteristics of Grade 1 pupils, who learn best through concrete experiences, imagination, and meaningful connections (Hassinger-Das et al., 2020). As a result, pupils may struggle to internalize mathematical concepts, which can negatively affect both their academic performance and their attitudes toward the subject (Alqahtani, 2021).

In response to these challenges, educators and researchers have increasingly explored alternative instructional strategies that are more engaging, contextualized, and learner-centered (Reyes & Reyes, 2025). One instructional approach that has gained growing attention in early childhood and primary education is storytelling. Storytelling involves the use of narratives, characters, and events to convey ideas in ways that are familiar and meaningful to children (Nicolopoulou et al., 2021). It has long been recognized as a natural mode of learning, as children often make sense of their experiences and environment through stories (Hassinger-Das et al., 2020).

Previous studies have shown that storytelling supports various aspects of cognitive development, including language acquisition, comprehension, memory, and attention (Hassinger-Das et al., 2020). Hassinger-Das et al. (2020) emphasized that story-based instruction helps learners understand abstract concepts by linking them to real-life situations and experiences. Similarly, Nicolopoulou et al. (2021) highlighted that storytelling enhances learner engagement and memory retention, which are critical for effective learning in the early grades. These findings suggest that storytelling can be a powerful instructional tool, particularly for young learners who benefit from contextualized and meaningful learning experiences (Al-Azri & Al-Rashdi, 2021).

In mathematics education, storytelling has been used as a strategy to present mathematical ideas within meaningful contexts, often through word problems, narrative-based

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scenarios, or story-driven tasks (Casey et al., 2020). Casey et al. (2020) explained that embedding mathematical concepts within stories allows learners to visualize problems, understand relationships between quantities, and apply mathematical reasoning more effectively. When mathematical ideas are connected to familiar characters and situations, learners are more likely to comprehend and retain these concepts (Lu & Fu, 2025).

Beyond cognitive benefits, storytelling has also been associated with positive affective outcomes. Research indicates that storytelling increases learners' motivation, interest, and enjoyment in learning activities (Al-Azri & Al-Rashdi, 2021). These affective factors are particularly important for Grade 1 pupils, whose engagement and attention are strongly influenced by interest and enjoyment (Alqahtani, 2021). Increased engagement has been linked to improved participation and more effective learning experiences, suggesting that storytelling may indirectly support academic development (Reyes & Reyes, 2025).

The use of storytelling in mathematics instruction is further supported by established learning theories. Constructivist theory emphasizes that learners actively construct knowledge by connecting new information to prior experiences (Hassinger-Das et al., 2020). Storytelling provides opportunities for learners to relate mathematical concepts to familiar situations, thereby facilitating meaningful learning (Casey et al., 2020). Likewise, socio-cultural theory highlights the role of language and social interaction in learning. Through storytelling, mathematical ideas are communicated using developmentally appropriate language, allowing learners to internalize abstract concepts through shared meaning and interaction (Nicolopoulou et al., 2021).

Despite the growing body of literature supporting storytelling as an instructional strategy, several gaps remain evident. Much of the existing research has focused on literacy development, language skills, and general classroom engagement, rather than on mathematics performance (Almusharraf, 2021). While some studies have explored storytelling in mathematics education, many have employed experimental or intervention-based designs, providing limited insight into how storytelling naturally functions within regular classroom settings (Lu & Fu, 2025).

Moreover, Grade 1 pupils remain relatively underexplored in the literature, as many studies have focused on early childhood education, kindergarten, or higher grade levels (Nicolopoulou et al., 2021). Grade 1 represents a critical transition period from informal numeracy experiences to formal mathematics instruction, making it an important stage for investigation (Reyes & Reyes, 2025). Additionally, there is a limited number of correlational studies examining the relationship between storytelling and measurable mathematics performance, such as grades or achievement scores. Correlational research is particularly valuable in educational contexts where experimental manipulation may not be feasible or ethical (Alqahtani, 2021).

In the Philippine context, research on storytelling in mathematics instruction is especially limited. Although the K–12 curriculum promotes learner-centered and contextualized teaching approaches, classroom practices often remain traditional due to large class sizes, limited instructional resources, and time constraints (Reyes & Reyes, 2025). The lack of local, context-specific empirical evidence makes it difficult for teachers and school administrators to make informed decisions regarding the integration of storytelling into mathematics instruction.

Given these gaps, further investigation is needed to examine storytelling practices in mathematics classrooms and their relationship to pupils' academic performance, particularly among Grade 1 learners. Addressing these concerns may contribute to a deeper understanding of how storytelling can be utilized as an instructional strategy to support early mathematics learning and inform evidence-based teaching practices (Lu & Fu, 2025)

Hypothesis of the Study

HO: There is no significant relationship between storytelling and the mathematics performance of Grade 1 pupils.

Significance of the Study

The findings of this study were expected to be significant to various stakeholders in the field of elementary education, particularly in enhancing the teaching and learning of mathematics among Grade 1 pupils. By examining the relationship between storytelling and mathematics performance, the study provided empirical evidence that could help improve instructional practices and support the academic development of young learners.

For **Grade 1 pupils**, the study was significant because it highlighted the potential value of storytelling as a learning approach that made mathematics more engaging, meaningful, and less intimidating. If storytelling was found to be positively associated with mathematics performance, pupils could benefit from learning experiences that were more enjoyable and easier to understand. This could help improve their confidence in mathematics, foster positive attitudes toward the subject, and strengthen foundational numeracy skills that were essential for future learning.

For **teachers**, particularly Grade 1 and primary-level teachers, the study offered practical insights into the use of storytelling as a teaching strategy in mathematics instruction. The results could guide teachers in designing lessons that integrated stories to explain mathematical concepts, present word problems, and sustain pupil interest. By providing evidence-based support for storytelling, the study could encourage teachers to move beyond purely traditional methods and adopt more developmentally appropriate and learner-centered strategies that addressed pupils' diverse learning needs.

For **school administrators and instructional leaders**, the study served as a basis for informed decision-making related to curriculum planning, teacher training, and instructional supervision. The findings could be used to support professional

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development programs that emphasized creative and contextualized teaching strategies, such as storytelling, in early mathematics education. Administrators could also use the results to promote innovative classroom practices that aligned with the goals of the K–12 curriculum and improved overall pupil performance.

For **curriculum planners and education policymakers**, the study contributed local, empirical evidence that could inform curriculum enhancement and policy development. By demonstrating the relevance of storytelling in mathematics instruction, the findings could support the integration of narrative-based and contextualized approaches into early grade learning standards and teaching guides. This was particularly important in strengthening the implementation of learner-centered instruction in public elementary schools.

For **future researchers**, the study provided a reference and foundation for further investigations on storytelling and mathematics education. The findings could serve as baseline data for experimental, longitudinal, or mixed-methods studies that explored storytelling as an instructional intervention or examined its effects on other learning outcomes such as problem-solving skills, motivation, or comprehension. Future studies could also expand the scope to other grade levels or subject areas.

Overall, the significance of this study lay in its contribution to improving early mathematics instruction through evidence-based strategies. By providing insights into the relationship between storytelling and mathematics performance, the study aimed to support effective teaching practices, enhance pupils' learning experiences, and contribute to the broader goal of strengthening foundational education.

Conceptual Framework

This study examined the relationship between storytelling (independent variable) and mathematics performance (dependent variable) of Grade 1 pupils. Storytelling involved using narratives, characters, and real-life contexts to present mathematical concepts, making learning more meaningful and engaging. Mathematics performance referred to pupils' achievement in basic numeracy skills, measured through assessments or test scores. The framework proposed that greater exposure to storytelling was associated with higher mathematics performance, guiding the study to explore whether a significant relationship existed between these two variables.

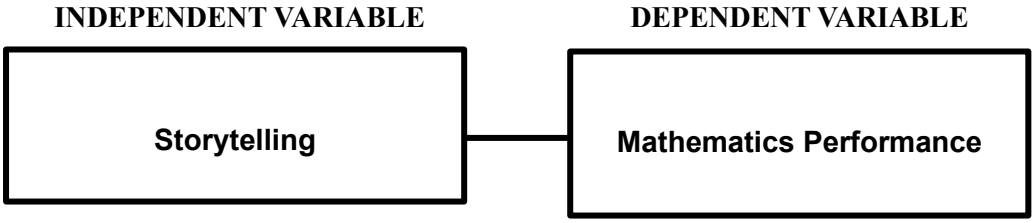

Figure 1: Paradigm of the Study

Scope and Delimitation of the Study

This study focused on examining the relationship between storytelling and the mathematics performance of Grade 1 pupils at Locsoon Elementary School. The participants consisted of 34 Grade 1 students, representing the entire population of first graders enrolled in the school during the academic year. The study was limited to exploring storytelling as an instructional strategy in mathematics, specifically its role in presenting mathematical concepts, illustrating word problems, and engaging pupils during lessons.

The mathematics performance of the participants was measured through their recent academic scores and classroom assessments in numeracy, including counting, number recognition, basic operations, and problem-solving tasks. Other factors that could influence mathematics performance, such as socio-economic status, parental support, or prior knowledge, were not included in the study. Additionally, the research focused solely on Grade 1 pupils and did not include students from higher grade levels, limiting the generalizability of the findings to other classes or schools.

The study was also restricted to the local school context of Locsoon Elementary School, which allowed the researchers to conduct close observation and data collection but limited the applicability of the results to other schools in different regions. Despite these limitations, the study provided valuable insights into how storytelling could potentially influence mathematics performance among early grade learners, offering practical implications for teachers and curriculum planners within the school.

Definition of Terms

The following group of words were given its full definition based on the way it will be used in this study.

Mathematics performance. Refers to the level of knowledge, skills, and problem-solving ability demonstrated by learners in mathematics, including understanding numerical concepts, operations, and application of these concepts in problem-solving situations. In this study, it was measured through the pupils' scores on classroom assessments, tests, and exercises covering numeracy skills such as counting, number recognition, basic addition and subtraction, and word problem-solving tasks.

Numeracy skills. Refers to the ability to understand and apply basic mathematical concepts and operations in everyday contexts. In this study, numeracy skills included counting, number recognition, addition, subtraction, and solving simple word problems, which were assessed as part of the pupils' mathematics performance.

Storytelling. Is an instructional strategy that involves using narratives, characters, events, and real-life contexts to present concepts in a meaningful and engaging manner, helping

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learners understand abstract ideas by connecting them to familiar experiences. In this study, storytelling referred to the structured use of short narratives or illustrative stories during mathematics lessons to explain concepts such as counting, number recognition, addition, and subtraction. Its implementation was measured based on the frequency, duration, and type of storytelling activities experienced by the Grade 1 pupils.

METHODOLOGY

The research design, course location, study participants, sampling strategy, research instrument, information collection method, and statistical evaluation and interpretation that were used to assess the data that were gathered were all thoroughly explained in this chapter, along with the procedures and methods that were employed in this investigation.

Research Design

This study employed a quantitative correlational research design to examine the relationship between storytelling and the mathematics performance of Grade 1 pupils at Locsoon Elementary School. A correlational design was deemed appropriate because the study aimed to determine the degree and direction of association between two variables—the independent variable (storytelling) and the dependent variable (mathematics performance)—without manipulating classroom conditions (Creswell & Creswell, 2018). This design allowed the researchers to observe naturally occurring relationships in a real educational setting, providing insight into how storytelling as an instructional strategy may be associated with pupils' academic outcomes.

The study was descriptive-correlation in nature, as it not only measured the level of storytelling exposure and mathematics performance but also described the characteristics of these variables among the participants (Fraenkel et al., 2020). By employing this approach, the researchers were able to quantify both variables using structured instruments, summarize the data statistically, and identify the strength and significance of the relationship between storytelling and mathematics performance.

The choice of a correlational design was further justified by the context of the study. Since all 34 Grade 1 pupils enrolled at Locsoon Elementary School were included, experimental manipulation, such as randomly assigning pupils to control and treatment groups, was neither necessary nor feasible (Creswell & Creswell, 2018). Instead, the study sought to investigate existing variations in storytelling exposure during regular mathematics lessons and how these variations were associated with differences in pupils' mathematics performance.

Data collection involved quantitative measures. Storytelling exposure was assessed through structured observation checklists and teacher-reported frequency of narrative-based instruction, while mathematics performance was evaluated using pupils' scores on recent classroom assessments and standardized exercises (Fraenkel et al., 2020). The correlation between the two variables was computed using Spearman's rho, which is appropriate for ordinal and small-sample data, to determine the strength and direction of the relationship (Field, 2020).

Overall, the correlational research design provided a systematic and empirical framework to explore the association between storytelling and mathematics performance, enabling the researchers to draw meaningful conclusions that could inform teaching strategies and curriculum planning in early mathematics education. By using this design, the study maintained high ecological validity, as the variables were observed in the natural classroom setting without interference, ensuring that the findings reflected real educational experiences of Grade 1 pupils (Creswell & Creswell, 2018).

Locale of the Study

This study was conducted at Locsoon Elementary School, a public elementary school located in Borongan City, Eastern Samar which serves the local community by providing primary education to children in the area. The school was chosen as the research site due to its manageable population of Grade 1 pupils, which allowed the researchers to conduct a focused and comprehensive study on storytelling and mathematics performance.

Locsoon Elementary School followed the Department of Education's K–12 curriculum, including structured mathematics lessons for Grade 1 pupils. The school was equipped with basic instructional facilities, such as classrooms, teaching materials, and visual aids, which enabled the implementation of storytelling as a teaching strategy. Its teachers had experience in delivering early grade mathematics instruction, making it a suitable setting to observe the natural variations in storytelling exposure among pupils.

The local setting of the school also allowed the researchers to interact closely with both teachers and pupils, ensuring accurate data collection and contextual understanding. By focusing on this specific locale, the study was able to provide insights that were directly relevant to the educational practices and learning experiences of Grade 1 pupils within the school. While the findings were specific to Locsoon Elementary School, they offered valuable implications for other schools with similar contexts and demographics.

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Figure 2. Map of the Locale

Respondents of the Study

The respondents of this study were the Grade 1 pupils enrolled at Locsoon Elementary School during the academic year 2025-2026, consisting of a total of 34 pupils, representing the entire population of first graders in the school. These pupils were chosen because they were the primary recipients of early mathematics instruction and were exposed to storytelling activities as part of their regular classroom learning. Only pupils who were officially enrolled in Grade 1, regularly attended mathematics classes where storytelling activities were incorporated, had parental or guardian consent, and were willing to participate in the assessments and other data-gathering activities were included in the study. Pupils were excluded if they were absent for an extended period during data collection, did not receive mathematics instruction that included storytelling, lacked parental consent, refused to participate, or had cognitive or learning challenges that could significantly affect their ability to participate, as identified by teachers or school records. By applying these inclusion and exclusion criteria, the study ensured that the respondents were appropriate and representative of typical Grade 1 pupils experiencing mathematics instruction with storytelling, while also safeguarding the ethical standards of voluntary participation and accurate data collection.

Sampling Procedure

The study employed a total population sampling technique, as all 34 Grade 1 pupils enrolled at Locsoon Elementary School during the academic year 2025-2026 were included as respondents. Total population sampling, a type of non-probability sampling, was chosen because the population size was small and manageable, allowing the researchers to gather comprehensive data from every pupil without the need for selecting a subset (Creswell & Creswell, 2018; Fraenkel et al., 2020). This approach ensured that the study captured the complete range of experiences and performance levels among the participants, enhancing the accuracy and reliability of the findings.

By including the entire population, the study minimized sampling bias and provided a more precise understanding of the relationship between storytelling and mathematics performance (Creswell & Creswell, 2018). Furthermore, the inclusion and exclusion criteria were applied to ensure that all participants were suitable for the study, had parental consent, and were regularly exposed to storytelling activities in their mathematics lessons. This method allowed the researchers to conduct an in-depth investigation of the variables in the natural classroom setting, reflecting the actual educational experiences of the Grade 1 pupils at Locsoon Elementary School.

Research Instrument

To collect the necessary data for this study, the researchers utilized structured observation and existing academic records, specifically designed to measure the variables of interest: storytelling exposure and mathematics performance. The instruments were selected and developed to ensure that the data gathered were reliable, valid, and appropriate for Grade 1 pupils.

The first part of the instrument focused on storytelling exposure. A structured observation checklist was adapted from the study of Alqahtani (2021), which examined the use of storytelling and narrative-based instruction in early mathematics education. The checklist, along with a teacher-reported frequency form, was used to determine how often

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storytelling techniques were employed in mathematics instruction. This included the use of short narratives, illustrative stories, and word problems presented during lessons. The checklist allowed the researchers to record the frequency, duration, and type of storytelling activities experienced by the pupils, providing quantitative data for the independent variable.

The second part of the instrument measured mathematics performance, which was the dependent variable. In this study, pupils' actual General Weighted Average (GWA) in mathematics was obtained from school records to reflect their overall performance in the subject. The GWA provided an objective and comprehensive assessment of pupils' achievement in numeracy skills, including counting, number recognition, addition, subtraction, and problem-solving, allowing for accurate analysis of the relationship between storytelling exposure and mathematics performance.

The instruments were subjected to content validation by experts in elementary education and mathematics instruction to ensure clarity, appropriateness, and alignment with the study's objectives. Additionally, a pilot test was conducted with a small group of Grade 1 pupils not included in the main study to assess the reliability of the observation checklist. Adjustments were made based on the feedback and results of the pilot testing to ensure that the instruments accurately measured the intended variables and were suitable for the cognitive level of the participants.

Data Gathering Procedure

The data gathering procedure for this study was carefully planned to ensure accuracy, reliability, and ethical compliance. Before collecting any data, the researchers secured permission from the school administration of Locsoon Elementary School to conduct the study. Additionally, informed consent was obtained from the parents or guardians of the Grade 1 pupils, explaining the purpose of the study, the procedures involved, and the voluntary nature of participation. The researchers ensured that all participants understood that they could withdraw from the study at any time without any penalty.

Data collection began with the assessment of storytelling exposure, using a structured observation checklist. The researchers observed the mathematics classes over a designated period to record the frequency, duration, and type of storytelling activities conducted by the teachers. Teachers were also asked to provide information on how often they integrated storytelling into their mathematics lessons to supplement the observations.

Following the observation of storytelling practices, the mathematics performance of the pupils was obtained by retrieving their actual General Weighted Average (GWA) in mathematics from school records. This provided an objective measure of each pupil's achievement in numeracy skills, including counting, number recognition, addition, subtraction, and problem-solving.

Throughout the data gathering process, the researchers adhered to ethical standards, ensuring confidentiality of pupil records and observation notes. Codes were assigned to each participant to prevent the disclosure of identities, and all collected data were stored in secure files accessible only to the research team. The combination of structured observation and existing academic records allowed the researchers to gather comprehensive and reliable quantitative data while maintaining a non-intrusive approach appropriate for Grade 1 pupils.

The gathered data were then prepared for analysis to determine the relationship between storytelling exposure and mathematics performance, using appropriate statistical methods, ensuring that the findings accurately reflected the experiences and academic outcomes of the pupils within the natural classroom setting

Measurement of Variables

The independent variable, storytelling, was measured across three sub-dimensions: frequency, duration, and quality, using a structured observation checklist adapted from Alqahtani (2021). Each sub-dimension was assigned an arbitrary code to facilitate statistical analysis. The dependent variable, mathematics performance, was measured using the pupils' actual GWA in mathematics, classified according to DepEd standards. The GWA was assigned corresponding verbal interpretations and arbitrary codes to reflect the pupils' academic achievement levels. This measurement framework allowed the researchers to analyze the correlation between storytelling exposure and mathematics performance using Spearman's rho, while maintaining alignment with official DepEd grading standards.

Variable	Sub-Dimension	Scale / Range (DepEd Standard)	Verbal Interpretation	Arbitrary Code
Storytelling Exposure	Frequency of storytelling	0 – 5 sessions/week	Very Low	1
		6 – 10 sessions/week	Low	2
		11 – 15 sessions/week	Moderate	3
		16 – 20 sessions/week	High	4
		21+ sessions/week	Very High	5
	Duration of storytelling	<5 minutes/session	Very Short	1
		5–10 minutes/session	Short	2
		11–15 minutes/session	Moderate	3
		16–20 minutes/session	Long	4
		21+ minutes/session	Very Long	5
	Quality of storytelling	Poor	Poor	1
		Fair	Fair	2

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		Good	Good	3
		Very Good	Very Good	4
		Excellent	Excellent	5
Mathematics Performance	Overall GWA in Mathematics	90 – 100	Outstanding	5
		85 – 89	Very Satisfactory	4
		80 – 84	Satisfactory	3
		75 – 79	Fair	2
		Below 75	Did Not Meet Expectations	1

Statistical Analysis

The study used quantitative statistical methods to examine the relationship between storytelling and the mathematics performance of Grade 1 pupils at Locsoon Elementary School. Storytelling was measured across three sub-dimensions: frequency, duration, and quality, while mathematics performance was assessed using the pupils' actual GWA in mathematics based on DepEd standards.

Descriptive statistics (mean, frequency, percentage, and standard deviation) were used to summarize the data, while Spearman's rank-order correlation (rho) was employed to determine the strength and direction of the relationship between storytelling and mathematics performance. The correlation was tested at a 0.05 level of significance, and all analyses were conducted using SPSS software. This approach allowed the researchers to evaluate whether higher exposure to storytelling was associated with better mathematics performance among the pupils.

Ethical Consideration

In conducting this study, the researchers adhered to ethical principles to ensure the safety, rights, and well-being of the participants. Since the respondents were Grade 1 pupils, special attention was given to obtaining parental or guardian consent prior to data collection. A written informed consent form was provided to parents or guardians, clearly explaining the purpose of the study, the procedures involved, the voluntary nature of participation, and the assurance that they could withdraw their child at any time without any penalty.

The study also ensured the assent of the pupils, meaning that the children were informed in an age-appropriate manner about the study and agreed to participate voluntarily. Pupils were treated with respect, and their comfort and emotional well-being were prioritized throughout the research process.

Confidentiality was strictly maintained. Each participant was assigned a code, and personal identifiers were removed from all records to ensure that individual responses could not be traced back to any pupil. All collected data, including observation notes and school records, were stored in secure, password-protected files accessible only to the research team.

The study involved minimal risk, as it consisted only of classroom observation and the use of existing academic records. Pupils were not subjected to any invasive procedures or activities that could cause harm or discomfort. Teachers and school staff were also informed of the study's purpose and procedures to ensure transparency and cooperation.

Finally, the research was conducted in accordance with the ethical standards set by the Department of Education (DepEd) and general research ethics guidelines, ensuring that the study upheld principles of voluntary participation, beneficence, non-maleficence, and confidentiality. The ethical considerations safeguarded both the rights of the participants and the integrity of the research process, providing a responsible framework for conducting the study in a school setting.

RESULTS AND DISCUSSION

This chapter presents the different results that were founded out through the data gathering procedure and the data analysis as well as the discussion of the said collected set of data results.

Storytelling

Based on the data, the majority of respondents (61.8%) experienced 11–15 storytelling sessions per week, indicating that storytelling is a moderately frequent activity, while 29.4% reported 6–10 sessions per week and only 8.8% attended 16–20 sessions weekly, with no respondents reporting either very low (0–5) or very high (21+) frequency. In terms of duration, most students (70.6%) participated in sessions lasting less than 5 minutes, and 29.4% experienced 5–10 minutes per session, with no respondents engaging in longer sessions, suggesting that storytelling activities are generally brief and likely designed to maintain attention and engagement. Regarding quality, 41.2% of students rated the storytelling as Excellent, 23.5% as Very Good, and 35.3% as Good, with no reports of Poor or Fair quality, indicating that storytelling is delivered in a highly effective and engaging manner. Overall, the findings show that storytelling is a well-integrated and high-quality practice in the learning environment, characterized by moderate frequency, short duration, and excellent quality, which may enhance students' engagement and motivation, though the brief duration could potentially limit deeper content discussion or extended learning opportunities.

These results are consistent with prior studies, which have demonstrated that frequent and high-quality storytelling promotes language development, listening skills, and cognitive engagement among learners (Isbell, Sobol, Lindauer, & Lowrance, 2004; Nicolopoulou, Trapp, & Kazami, 2015). Moreover, brief but focused storytelling sessions have been shown to maintain students' attention and prevent cognitive overload, supporting effective learning outcomes (Wright, 2010).

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Table 1. Storytelling (Frequency, Duration, and Quality of Storytelling)

Academic Achievement	Frequency	Percentage
Frequency of Storytelling		
0 – 5 sessions/week	0	00.0%
6 – 10 sessions/week	10	29.4%
11 – 15 sessions/week	21	61.8%
16 – 20 sessions/week	3	8.8%
21+ sessions/week	0	00.0%
Total	**34**	**100%**
Duration of Storytelling		
<5 minutes/session	24	70.6%
5–10 minutes/session	10	29.4%
11–15 minutes/session	0	00.0%
16–20 minutes/session	0	00.0%
21+ minutes/session	0	00.0%
Total	**34**	**100%**
Quality of Storytelling		
Poor	0	00.0%
Fair	0	00.0%
Good	12	35.3%
Very Good	8	23.5%
Excellent	14	41.2%
Total	**34**	**100%**

Mathematics Performance

The distribution of mathematics achievement among the 34 respondents shows that none scored in the lower ranges (75–80 or 81–85), with only 5.9% obtaining scores between 86–90 and a substantial majority (47.1% each) achieving very high scores in the 91–95 and 96–99 ranges, indicating that most students demonstrate strong academic performance in mathematics. This clustering of high achievement suggests that learners are consistently meeting and exceeding proficiency expectations, which may reflect effective instructional practices and learner engagement within the classroom context.

Recent literature on mathematics education supports the importance of engaging instructional strategies, such as narrative and storytelling approaches, in enhancing students' conceptual understanding and motivation, which are critical factors associated with high achievement (Reyes & Reyes, 2025). Specifically, meta-analytic evidence indicates that storytelling integrated into mathematics instruction can significantly improve students' conceptual understanding, problem-solving skills, and engagement, with positive effects noted across educational levels (Reyes & Reyes, 2025). Additionally, research on digital storytelling demonstrates how contextualized, narrative-based activities can make abstract mathematical concepts more relatable and engaging for learners, thereby supporting academic outcomes (Lu & Fu, 2025). These findings suggest that instructional approaches involving narrative contexts and story-driven tasks have the potential to foster deeper engagement and achievement in mathematics, aligning with the observed high performance of students in this study.

Table 2. Mathematics Achievement

Mathematics Achievement	Frequency	Percentage
75-80	0	00.0%
81-85	0	00.0%
86-90	2	05.9%
91-95	16	47.1%
96-99	16	47.1%
Total	**34**	**100%**

Relationship Between Storytelling and Mathematics Performance

The correlation analysis between storytelling and academic performance revealed a very strong positive relationship ($r = 0.937$), which was statistically significant ($p = 0.043$), indicating that increased exposure to storytelling is strongly associated with improved academic performance among respondents. The significance of this correlation suggests that storytelling plays a substantial role in enhancing students' learning outcomes, supporting its effectiveness as an instructional strategy.

This finding is consistent with recent studies emphasizing the impact of storytelling on student engagement, comprehension, and overall academic achievement (Alqahtani, 2021; Lu & Fu, 2025). For example, research on digital and narrative-based

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storytelling demonstrates that integrating stories into lessons can make abstract concepts more relatable, improve retention, and foster critical thinking, thereby contributing to higher academic performance (Almusharraf, 2021; Reyes & Reyes, 2025). These studies reinforce the conclusion that storytelling is not only an engaging pedagogical tool but also a significant factor in promoting academic success, aligning with the strong positive correlation observed in this study.

Table 3. Correlation

Indicators	Correlation		Level of Significance		Decision
	Measure	Interpretation	p-value	Interpretation	
Storytelling vs. Academic Performance	.937	Weak positive Correlation	.043	Significant	Failed to Accept Null Hypothesis

Conclusion

Based on the findings of the study, it can be concluded that storytelling is a well-established and high-quality instructional practice among the respondents, characterized by moderate frequency, brief duration, and effective delivery. Most students experience storytelling sessions regularly, with the majority participating in 11–15 sessions per week, and the sessions are generally short, lasting less than 10 minutes, which likely supports attention and engagement. The quality of storytelling is notably high, with students rating it as Good, Very Good, or Excellent, indicating that it is delivered in an engaging and effective manner. In terms of academic outcomes, respondents demonstrated strong performance in mathematics, with nearly all students achieving scores above 90, reflecting both consistent engagement and effective learning practices.

The analysis also revealed a very strong positive correlation between storytelling and academic performance, indicating that students exposed to frequent and high-quality storytelling tend to achieve higher academically.

Overall, the study underscores the value of storytelling as a pedagogical strategy that can enhance student engagement, motivation, and learning outcomes, particularly in mathematics, when implemented with appropriate frequency, duration, and quality.

Recommendations

Based on the findings of the study, it is recommended that teachers continue to incorporate storytelling into the classroom as a regular instructional strategy, ensuring that sessions are conducted with moderate frequency to sustain student engagement and reinforce learning. Storytelling activities should be designed to be brief and focused, ideally lasting under ten minutes, to maintain attention while preventing interference with other academic tasks. Emphasis should be placed on delivering high-quality storytelling, using clear narratives, expressive delivery, and relevant content to maximize learning outcomes. Additionally, integrating storytelling with mathematics instruction through contextualized problems, story-driven examples, or narrative-based tasks can make abstract concepts more relatable and enhance students' academic performance. Teachers are also encouraged to implement collaborative or peer-based storytelling activities to foster communication skills, participation, and social interaction among students. Continuous monitoring and evaluation of storytelling's impact on engagement and achievement are important to optimize its effectiveness, while ensuring that storytelling complements, rather than replaces, other instructional strategies such as discussions, practice exercises, and interactive learning approaches. By thoughtfully balancing frequency, duration, and quality, storytelling can serve as a powerful pedagogical tool that enhances both motivation and academic outcomes in the classroom.

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