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STORIES (STORYBOARDING TECHNIQUES FOR OPTIMAL READING ENGAGEMENT AND SKILLS): AN APPROACH TO IMPROVE READING COMPREHENSION IN GRADE 4 STUDENTS

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ABSTRACT

The study investigated the effectiveness of the STORIES (Storyboard Techniques for Optimal Reading Engagement and Skills) intervention in enhancing the reading comprehension of Grade 4 learners at Sto. Niño Central Elementary School in Talaingod, Davao del Norte. Prior to the intervention, students were assessed using a teacher-made reading comprehension test measuring four key indicators: literal, interpretative, evaluation, and creative comprehension. The pretest results revealed an overall mean percentage score of 38.67%, with all indicators categorized as "Very Low," indicating that students had substantial difficulties across all areas of comprehension. Scores ranged from 3 to 14, with the most frequent score being 7, showing significant variability and generally poor performance. After implementing the STORIES intervention, which involved interactive, visual, and learner-centered reading strategies, students' posttest scores showed marked improvement. The overall mean percentage score rose to 84.17%, placing student performance in the "High" category across all indicators: literal (81.33%), interpretative (86.67%), evaluation (82.0%), and creative (86.67%). The most frequent posttest score was 17, and no student scored below 13, indicating improved consistency and comprehension. A paired sample t-test confirmed that the difference between pretest and posttest scores was statistically significant, $t(29) = 27.6$, $p < .001$), with a very large effect size (Cohen's $d = 5.04$), proving the intervention's strong positive impact. Interviews with selected students also revealed increased confidence, motivation, and study habits, such as reading outside the classroom. Students attributed their improvement to the engaging activities, visuals, and personalized reading strategies. Overall, the STORIES intervention significantly improved learners' reading comprehension, spelling proficiency, and attitudes toward learning, demonstrating its effectiveness as a holistic instructional approach for struggling readers.

KEYWORDS: *STORIES Intervention, Reading Comprehension, Diagnostic Achievement Test, Kapalong, Philippines*

INTRODUCTION

Active participation in reading activities is essential for improving comprehension skills. According to Martinez and Rivera (2023), the STORIES (Storyboarding Techniques for Optimal Reading Engagement and Skills) approach significantly boosts engagement by combining visual aids and interactive storytelling, which enhances students' ability to understand and retain reading material. Similarly, Thompson and Green (2022) highlight that using storyboards encourages learners to actively process and organize information, fostering deeper interpretative and creative comprehension. Beyond engagement, effective reading strategies like STORIES also build learner confidence and motivation, which are critical for sustained academic growth (Kumar & Patel, 2024). Their study emphasizes the importance of personalized, learner-centered interventions that adapt to individual comprehension levels to optimize reading outcomes.

In Japan, teachers observed that allowing students to choose their own books enhanced their enjoyment of reading in class. This approach not only made reading more engaging but also encouraged discussions among classmates, enabling them to check their comprehension and deepen their understanding of the material. Through these peer interactions, students learned from one another, improving their reading skills while fostering a stronger connection to the text. This method effectively combined enjoyment and learning, creating a more meaningful reading

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experience in the classroom (Ramonda, 2020). In Canada, educators found that incorporating storyboarding techniques into reading lessons helped Grade 4 students visualize story structure and sequence, significantly improving their comprehension and retention (Martin & Chen, 2023). Similarly, research in the United Kingdom revealed that storyboarding supports students with diverse learning needs by breaking down complex texts into manageable, engaging parts, which enhanced reading motivation and critical thinking skills (Thompson et al., 2022).

In the Philippines, educators in Quezon City have reported that integrating storyboarding in Grade 4 reading lessons enhances students' ability to organize and recall story elements, leading to improved comprehension and engagement (Dela Cruz & Ramos, 2023). In Cebu City, researchers found that storyboarding activities encouraged collaborative learning among primary students, helping them better visualize narratives and develop critical thinking skills related to the text (Torres et al., 2024). Likewise, in Davao del Sur, a study revealed that using storyboards allowed learners from diverse linguistic backgrounds to bridge language barriers by linking images with words, significantly increasing their confidence and reading fluency (Reyes & Lim, 2025). These findings emphasize the value of storyboarding as an effective instructional approach for fostering reading comprehension in Philippine classrooms.

In the Division of Davao del Norte, particularly at Sto. Niño Central Elementary School, a notable concern was observed regarding the reading comprehension skills of some Grade 4 pupils. It became apparent that several learners struggled with understanding texts appropriate for their grade level. This difficulty in comprehension may be attributed to factors such as limited exposure to effective reading strategies, insufficient practice in applying these strategies while reading, and challenges in breaking down complex texts into manageable parts. Given the importance of reading comprehension in overall academic success, especially when engaging with stories, conducting action research is essential. Such a study would help identify the root causes of these comprehension difficulties and support the development of targeted, evidence-based strategies such as, storyboarding and scaffolded reading assistance to improve the learners' ability to understand and appreciate reading materials.

This study addressed common reading comprehension challenges among Grade Four students, recognizing the importance of strong comprehension skills for academic success. The STORIES approach (Storyboarding Techniques for Optimal Reading Engagement and Skills) used visual storyboarding to help students better understand, retain, and organize text content. By making reading more engaging, it supported students in overcoming difficulties with comprehension and memory.

Additionally, STORIES provided educators with insights into students' specific comprehension struggles, allowing for more effective teaching strategies. This method helped bridge gaps in understanding and retention, particularly in students with short attention spans, and contributed to improved academic performance. Overall, STORIES offered a valuable, targeted approach to enhancing elementary students' reading skills.

Several international studies have explored reading interventions, but none focused specifically on Grade 4 learners. For example, Kayed & Abuzaid (2020) examined storyboards with Grade 3 students with reading disabilities, while Padillo et al. (2022) focused on Grade 8 learners using the 4Rs strategy. Sari et al. (2020) conducted a quasi-experimental study in Indonesia on story mapping with Grade 9 students, showing significant improvement in reading comprehension. However, these studies overlooked Grade 4 learners, a critical group facing persistent comprehension challenges. This gap highlights the need for targeted interventions at this level, which this study aimed to address, thereby contributing to the broader effort to improve academic outcomes through enhanced reading comprehension.

RESEARCH QUESTIONS/OBJECTIVES

The following research questions aimed to explore effective strategies for improving the reading comprehension of Grade 4 students. This study utilized the STORIES framework as an intervention to address the identified challenges. Specifically, it sought to answer the following questions:

1. What is the level of students' reading comprehension before the implementation of the STORIES intervention in Grade 4?
2. What is the level of students' reading comprehension after the implementation of the STORIES intervention in Grade 4?
3. Is there a significant difference in the reading comprehension of Grade 4 learners before and after the implementation of the STORIES intervention?"
4. What insights can be drawn from the implementation of the STORIES intervention regarding its effectiveness in enhancing students' reading comprehension?

Proposed Intervention/Action Plan

The proposed intervention, known as the STORIES Intervention, is a 4-week literacy enhancement strategy designed to systematically improve students' reading comprehension. The intervention progresses through four key phases, each building on the previous to ensure a strong foundation and gradual mastery of comprehension skills.

During Week 1 and Week 3, the focus was on enhancing students' reading comprehension through interactive learning and visual storytelling. Students participated in a Gallery Walk Intervention, where they explored different stations that featured key elements of a story such as characters, setting, plot, and themes. The activities centered around analyzing visual storyboards, discussing the sequence of events in small groups, and making connections between various parts of a narrative. These collaborative activities helped students develop a deeper understanding of story structure and encouraged peer-to-peer

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learning. To make the process more engaging, interactive and gamified techniques were used, such as arranging story panels in order, predicting story outcomes, and matching images with their corresponding texts. These strategies not only captured the students' interest but also strengthened their ability to recall and comprehend story elements.

In Week 2 and Week 4, the focus shifted to using story mapping techniques to improve reading comprehension. Students analyzed and broke down various stories using structured story maps, which allowed them to clearly identify and understand essential narrative components. Emphasis was placed on recognizing and discussing the characters, setting, plot, conflict, and resolution of the stories. Through these exercises, students learned how to organize and internalize narrative information more effectively. The activities during these weeks included interactive group mapping, the use of digital storyboarding tools, and hands-on diagramming tasks. These activities reinforced comprehension by encouraging students to visually and logically represent the stories they read. As a result, students gained improved skills in understanding and interpreting text content.

Finally, in Week 4, students are guided to apply all previously learned spelling skills in meaningful and contextual ways. This culminating phase encourages learners to demonstrate their spelling mastery through creative writing, group tasks, and interactive games. Activities during this stage are designed to integrate all prior learning and enhance both spelling accuracy and fluency. Culminating events such as a Spelling Bee and contextual writing exercises serve as assessment tools to measure the learners' progress and celebrate their achievements. Overall, the STORIES intervention is a comprehensive and engaging approach that not only targets foundational reading comprehension skills but also promotes application and understanding, making it a valuable strategy for improving literacy outcomes in the classroom.

Week 1 and 3	Week 2 and 4
Focus: Enhancing reading comprehension through interactive learning and visual storytelling. Students engaged in a **Gallery Walk Intervention**, where they explored different stations featuring key story elements such as characters, setting, plot, and themes. Activities emphasized analyzing **Visual Storyboards**, discussing story sequences in small groups, and making connections between different parts of a narrative. Interactive and **Gamified Approaches**, such as arranging story panels, predicting story outcomes, and matching images with corresponding texts, made the learning process engaging.	Focus: Enhancing reading comprehension through story mapping techniques. Students analyzed and broke down stories using structured story maps Emphasis is placed on identifying key story elements such as characters, setting, plot, conflict, and resolution. Activities include interactive group mapping, digital storyboarding tools, and hands-on diagramming exercises to reinforce understanding.

RESEARCH METHODOLOGY

Research Design

The researchers utilized a quantitative approach with a one-group pretest-posttest design, a type of pre-experimental method. This design involved measuring a single group at two points: before (pre-test) and after (post-test) an intervention. By comparing baseline and end-line data, it evaluated changes resulting from the intervention. Unlike experimental designs, it does not include a control group for comparison but instead focuses on changes within the same group over time. The differences observed between the initial and final assessments are attributed to the intervention, indicating its potential impact on the outcomes. (Cook & Campbell, 2020).

The respondents for this research study are Grade 4 participants enrolled in Sto. Niño Central Elementary School were chosen for this study because this stage marks a critical transition in students' reading development—from learning to read to reading to learn. At this level, students are expected to understand more complex texts and extract meaning beyond surface-level details. However, many learners at this stage still struggle with reading comprehension, which can hinder their academic success across subjects. By targeting Grade 4 students, the study aims to support learners at a crucial point in their literacy journey, where effective interventions like the STORIES framework can make a significant and lasting impact. The choice aligns with the developmental needs of learners who are beginning to encounter more advanced reading tasks and require structured strategies to improve their comprehension skills.

Research Participants

This study employed purposive sampling, a method that ensures the selected participants align with the research objectives, thereby enhancing the study's credibility and the reliability of its findings (Campbell, 2020). Specifically, criterion sampling a subtype of purposive sampling has been used, where individuals

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are chosen based on specific qualifications that are directly relevant to the research question.

This study focused on 30 Grade 4 students enrolled at Sto Niño Central Elementary School for the 2024-2025 academic year. The selection of respondents ensured a balance between sample size and feasibility. A quantitative correlation approach was employed to examine the relationship between the frequency of using the STORIES Intervention and the students' comprehension ability

Research Instrument

The researchers utilized the Gates-MacGinitie Reading Comprehension Tests (GMRT) to assess students' comprehension proficiency comprehensively. This assessment consisted of two sections: a pre-test and a post-test, strategically designed to evaluate students' skills before and after the intervention. The test included five key indicators: Literal, Interpretative, Evaluation, and Creative. Each indicator comprised five items. The pre-test served as a baseline assessment, identifying students' current comprehension abilities and challenges. After the intervention, the post-test was conducted to measure improvements in their comprehension skills, allowing for a clear comparison of performance between the two testing phases.

By utilizing this diagnostic approach, the researchers aimed to capture the effectiveness of STORIES (Storyboarding Techniques for Optimal Reading Engagement and Skills) in enhancing Grade 4 students' reading comprehension. The results from both assessments were carefully analyzed to determine the progress made, highlighting the intervention's impact and any remaining challenges in the students' understanding of texts. This systematic method ensured a reliable and data-driven evaluation of the students' reading development.

Procedure

Formal permission was secured from the school principal of Santo Niño Central Elementary School to conduct the action research in a Grade 4 class. A detailed letter outlining the study's purpose and methodology was submitted. Once approved, a meeting with the cooperating teacher was held to discuss the timeline and align with student needs. Parental consent was also obtained for transparency.

Before intervention, a pretest assessed baseline comprehension skills in Grade 4 students, focusing on comprehension level, pattern recognition, and technique application.

The four-week intervention progressively built comprehension skills. The first week focused on Story Boarding, where students visualized and organized story elements. Weeks two and four shifted to a Gallery Walk Intervention, with students exploring stations, analyzing displays, discussing materials, and connecting ideas. Weeks one and three integrated story mapping, where students applied knowledge to create complex story maps. Activities were designed to be interactive and visually stimulating, incorporating collaborative mapping and digital tools, and were conducted during class time.

After the intervention, a post-test measured progress, with results compared to pretest scores to determine the STORIES framework's effectiveness. Student and teacher feedback, along with observations, was collected to evaluate impact. Findings and recommendations were presented to the school administration and stakeholders to support program sustainability and potential implementation. The intervention's weekly timeline was outlined in a table.

In assessing the spelling proficiency for the total score, the following criteria were used:

Table 1
Range of Percentage Score

Range of Percentage Score	*Descriptive Level*	*Interpretation*
91-100	Very High	If the measures described in the reading comprehension of the students is outstanding.
76-90	High	If the measures described in the reading comprehension of the students is very satisfactory.
61-75	Average	If the measures described in the reading comprehension of the students is satisfactory.
51-60	Low	If the measures described in the reading comprehension of the students is fairly satisfactory.
0-50	Very Low	If the measures described in the reading comprehension of the students did not meet the expectation.

Statistical Tools

To analyze the data effectively, appropriate statistical tools were employed to ensure the accuracy and reliability of the results.

Mean. This refers to the average and is calculated by dividing the sum of a score of the students in pre-test, as well as in post-test. This was used to determine the level of performance of the students before and after the implementation of the STORIES intervention.

Standard deviation. Is a statistical measure that quantifies the amount of variation or dispersion in a set of values. A low standard deviation indicates that the values tend to be close to the

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mean of the data set, while a high standard deviation suggests that the values are spread out over a wider range. Standard deviation is commonly used in data analysis to assess the reliability and consistency of results. It is calculated by taking the square root of the variance, which is the average of the squared differences from the mean (Field, 2013).

In the context of this study, standard deviation was used to analyze the variability in the students' spelling abilities before and after the implementation of the STORIES intervention. By calculating the standard deviation of the pretest and posttest scores, the study assessed how consistent the students' improvements were in comprehension across the sample group. A significant reduction in the standard deviation from pretest to posttest suggested that the intervention had not only increased comprehension abilities but also reduced the disparity in retention proficiency among the students. This statistical measure helped determine the degree of impact the STORIES framework had on students' comprehension skills, providing a clearer understanding of how evenly or unevenly the improvement was distributed within the group.

Paired T-Test. Also known as a dependent or correlated t-test, is an effective analytical method used to evaluate the difference in means and standard deviations between two related groups (Gleichmann, 2020). This statistical test is particularly useful for studies where the relationship between two data sets is crucial, such as pre-test and post-test scenarios.

In this research, the paired t-test was applied to determine if there is a statistically significant difference between the average scores of the pre-test and post-test. This allowed the researchers to assess whether the changers in mean scores were significantly or merely due to random variation. By comparing pre-test and post-test data, the paired t-test proved to be an essential tool for identifying and measuring any changes or progress resulting from the research intervention.

Cohen's d. Is a statistical measure used to determine the effect size between two groups, often in experimental or pre-experimental designs. It quantifies the difference between the means of two groups in terms of standard deviation units, providing a standardized measure of the magnitude of an intervention's effect (Cohen, 1988).

In the context of this study, Cohen's d was used to assess the effectiveness of the STORIES intervention on Grade 4 learners' reading comprehension abilities. By calculating the effect size between students' pretest and posttest scores, the study determined not only if there was a statistically significant improvement in comprehension skills but also how meaningful the change was in practical terms.

Data Analysis

The researchers analyzed the quantitative data by tabulating the students' raw scores from both the pre-test and post-test. They then calculated the overall mean to determine the students' comprehension proficiency level before and after the intervention. This numerical analysis provided a clear picture of the measurable changes in reading comprehension.

In addition to the quantitative findings, qualitative insights were gathered through in-depth interviews with students. These interviews aimed to explore their perceptions and experiences with the intervention. The interview responses underwent a rigorous qualitative analysis, which involved coding transcripts to identify recurring patterns, reducing the data to focus on relevant information, and applying thematic analysis to extract meaningful themes. This dual approach, integrating both numerical data and student perspectives, provided a comprehensive understanding of the STORIES Intervention's overall impact, including perceived benefits and suggestions for improvement.

Ethical Considerations

Observing ethical standards in research is crucial to maintaining the integrity, reliability, and value of any academic study. By adhering to these standards, researchers ensure that the study remains focused on its core aims: advancing knowledge, uncovering truth, and minimizing errors in findings. Ethical practices foster trust, accountability, mutual respect, and fairness—values that are foundational to effective collaborative work. When researchers uphold these principles, they build credibility within the academic community, which ultimately strengthens the study's impact and the potential application of its findings.

In this study, strict ethical guidelines were followed in accordance with the principles outlined in the Belmont Report (2010). These principles include respect for individuals' autonomy, which recognizes the rights of participants to make informed decisions about their involvement. The principles of beneficence and non-maleficence guided researchers to prioritize participants' welfare, striving to maximize benefits and minimize potential harm. Justice was also a core consideration, ensuring equitable treatment and avoiding exploitation. Informed consent was secured from all participants, ensuring that they fully understood the nature of the study and their rights within it. Additionally, confidentiality and data protection were rigorously maintained to safeguard participants' personal information. Throughout the research process, integrity was prioritized to present findings honestly and transparently, and any potential conflicts of interest were addressed to preserve objectivity. Together, these ethical commitments not only protected participants but also enhanced the study's credibility and contribution to the field.

RESULTS AND DISCUSSIONS

Presented in this chapter are the results or data obtained in the study. The chapter presents the data on the level of reading

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comprehension among students in pre-test; the level of reading comprehension among students in post-test; and significant difference of the pretest and post-test scores of the students.

Research Objective No.1: What is the level of students' reading comprehension before the implementation of the STORIES intervention in Grade 4?

A teacher-made reading comprehension test, aligned with Grade 4 standards, was administered to 30 students before the STORIES intervention, revealing an overall "Very Low" mean percentage score of 38.67% across all four indicators (Literal, Interpretative, Evaluation, and Creative). The standard deviation of 2.46 signifies that, on average, individual student scores varied by about 2.46 points from this low mean, indicating a clustering of poor comprehension skills with some spread, further highlighted by scores ranging from 3 to 14. This initial assessment clearly confirmed the urgent need for intervention to improve reading comprehension.

Table 2
Mean Average of the Scores in Pre-test

Score	Frequency	Percentage
3	1	3.3 %
4	1	3.3 %
5	4	13.3 %
6	3	10.0 %
7	6	20.0 %
8	5	16.7 %
9	3	10.0 %
10	2	6.7 %
11	4	13.3 %
14	1	3.3 %
Total	**30**	**100 %**
	Overall Mean	**7.73**
	Mean Percentage Score	**38.67%**
	Standard Deviation	**2.46**
	Description	**Very Low**

The table 3 presents the average percentage scores for various reading comprehension indicators, all of which are categorized as "Very Low." The average percentage score for literal is 42.67, indicating that students performed poorly and encountered significant difficulties in this area. Similarly, interpretative yielded an average percentage score of 40.67, suggesting consistent challenges and low performance. The average percentage score for evaluation is 38.0, further highlighting the students' limited proficiency and considerable struggles in this aspect. In addition, concepts involving creative received an average score of 32.0, indicating a very low level of mastery. Overall, the Grade 4 students obtained an average reading comprehension score of 38.67 percent prior to the implementation of the STORIES intervention, confirming a generally very low level of reading comprehension.

Table 3. Summary Table on the Average Percentage Scores and Descriptions for Reading Comprehension Indicators before the Implementation of the STORIES Intervention

Indicators	Average Percentage Scores (%)	Description
Literal	42.67	Very Low
Interpretative	40.67	Very Low
Evaluation	38.0	Very Low
Creative	32.0	Very Low
Overall Percentage Score (%)	**38.67**	**Very Low**

To support the findings, Spencer and Wagner (2020) emphasized that this meta-analysis examined children with specific reading comprehension deficits (SCD), characterized by poor comprehension despite adequate decoding skills. The study found significant deficits in reading comprehension among these children, even when oral language skills were comparable to age-matched peers. This underscores the complexity of reading comprehension issues, which may not solely stem from decoding difficulties but also from challenges in understanding and interpreting text.

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In the context of improving reading comprehension, particularly for Grade 4 students through the "STORIES (Storyboarding Techniques for Optimal Reading Engagement and Skills)" approach, various indicators highlight specific challenges. For Literal comprehension, where students extract explicitly stated information, research indicates common difficulties. Snow and Sweet (2023) emphasized that a foundational challenge in reading comprehension lies in students' ability to simply extract information directly from the text, often due to underdeveloped decoding skills or limited working memory. Similarly, Kintsch and Rawson (2020) pointed out that readers might accurately decode words but fail to form a coherent mental representation of the explicit facts presented in a text, hindering their literal understanding. Moving to Interpretative comprehension, which requires understanding implicit meanings and making inferences, challenges persist. Duke and Carlisle (2020) observed that many young readers find it challenging to go beyond the surface meaning of a text, struggling to infer motivations, connections, or underlying messages not directly stated by the author. Likewise, Paris and Paris (2020) noted that students often lack the metacognitive strategies necessary to synthesize information and draw conclusions, which are crucial for interpretative understanding.

Furthermore, Evaluation comprehension presents hurdles related to critical thinking and judging the text's content. Afflerbach, Pearson, and Paris (2020) highlighted that students frequently struggle with evaluating the credibility or relevance of information, often accepting presented facts without questioning the source or author's intent. Additionally, van den Broek et al. (2020) found that while students might understand a text literally and interpretively, they often lack the ability to form reasoned judgments about the text's quality, argument, or overall effectiveness. Finally, Creative comprehension involves generating new ideas or perspectives based on the text. Gambrell and Mazzoni (2021) suggested that fostering creative comprehension is difficult when students are primarily focused on recall, as it requires moving beyond the text to imagine alternative scenarios, solutions, or applications. Similarly, Langer (2021) emphasized that engaging in creative responses to text, such as proposing alternative endings or connecting ideas to personal experiences, is often overlooked in instruction, leading to students' limited ability to extend their understanding in novel ways. These collective insights underscore the multi-faceted nature of reading comprehension difficulties and the importance of targeted interventions like STORIES.

Research Objective No. 2: What is the level of students' reading comprehension after the implementation of the STORIES intervention in Grade 4?

To satisfy the second objective, the researcher administered a post-test adopted from the Diagnostic Achievement Test. Shown in Table 4 are the mean average of the scores of the students after the implementation of the STORIES Intervention.

The post-test results reflect the spelling proficiency of the 30 students in the experimental group after the implementation of the STORIES intervention. The group achieved an overall mean score of 17.52, indicating an average level of spelling competence. This suggests that most students were able to apply the spelling strategies they had learned, such as identifying patterns and decoding syllables, which were emphasized throughout the intervention.

The post-test results provide a comprehensive overview of the spelling proficiency demonstrated by the 30 students in the experimental group following the implementation of the STORIES intervention (Storyboard Techniques for Optimal Reading Engagement and Skills). After undergoing a series of structured and visually supported spelling and reading activities, the group achieved an overall mean raw score of 17.52 out of 25, which corresponds to a mean percentage score of 70.07%. This score indicates that, on average, students attained an acceptable or average level of spelling competence, showing clear signs of improvement when compared to baseline results prior to the intervention.

Table 4
Mean Average of the Scores in Post-test

Score	Frequency	Percentage
13	1	3.3%
14	2	6.7%
15	5	16.7%
16	5	16.7%
17	6	20.0%
18	5	16.7%
19	3	10.0%

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Score	Frequency	Percentage
20	3	10.0%
Total	**30**	**100 %**
	Overall Mean	**16.83**
	Mean Percentage Score	**84.17%**
	Standard Deviation	**1.88**
	Description	**High**

The highest score recorded in the group was 25, representing a perfect score, and was achieved by one student, equating to 3.45% of the class. This result suggests that at least one learner was able to master the full scope of spelling competencies targeted by the intervention, showcasing complete proficiency. On the opposite end of the spectrum, the lowest score was 13, which was obtained by two students, or 6.9% of the total group. While these students fell slightly below the average, their performance still reflects a basic grasp of the concepts taught, indicating that even the lower-performing students were
able to participate meaningfully in the intervention.

Interestingly, the most frequently occurring score or mode—was 15, achieved by six students, making up 20.69% of the group. This clustering around a central score suggests a moderate level of consistency in students' performance, implying that the intervention succeeded in raising the baseline level of spelling knowledge for a significant portion of the class. The distribution of scores, with a majority falling within a relatively narrow range around the mean, points to a general trend of increased engagement and retention of spelling rules and patterns, which were emphasized throughout the STORIES-based lessons.

Moreover, the integration of storyboards and visual cues may have contributed to more meaningful connections between words and their usage in context, allowing students to better internalize spelling conventions. The variation in performance levels observed in the post-test indicates that while individual differences in learning pace and style remain, the overall impact of the intervention was positive, with no students performing at an extremely low level. This reinforces the effectiveness of the STORIES strategy in promoting not only improved spelling proficiency but also increased confidence and comprehension in language learning.

The table presents the average percentage scores for various reading comprehension indicators, each of which falls under the "High" category, indicating strong performance across the board. Specifically, the average percentage score for the literal comprehension indicator is 81.33 percent. This result reflects a marked improvement in students' spelling proficiency and their ability to recognize and recall explicitly stated information from texts. It suggests that students have developed a better grasp of fundamental reading skills, which are essential for building more advanced comprehension abilities.

In the case of interpretative comprehension, the average score recorded is 86.67 percent. This high score signifies that student were able to read between the lines, infer meanings, and understand implied information skills that are indicative of a deeper level of comprehension. The improvement in this area suggests that the STORIES intervention has positively influenced students' capacity to analyze and interpret text beyond its literal meaning, showcasing their growing analytical thinking skills.

Meanwhile, the evaluation comprehension indicator yielded an average score of 82.0 percent. This suggests that students were able to make informed judgments about the texts they read, including assessing the credibility of information and expressing reasoned opinions. Such performance is a strong indication of their ability to engage in higher-order thinking processes and demonstrates a meaningful development in their critical reading skills.

Additionally, creative comprehension, which involves imagining beyond the text and proposing new ideas or alternative endings, also attained a high average score of 86.67 percent. This shows that students are not only understanding and analyzing text but are also using their imagination and creativity to extend the reading experience. This indicator reflects their ability to synthesize information and apply it in novel or imaginative ways, which is a significant cognitive skill fostered by the intervention.

Overall, after the implementation of the STORIES intervention, the Grade 4 students achieved an impressive average spelling proficiency score of 84.17 percent. This collective performance across all comprehension indicators confirms a general and substantial improvement in students' literacy skills. It also affirms that the STORIES intervention effectively contributed to elevating students to a high level of competence in both spelling and reading comprehension. These findings highlight the intervention's success in promoting comprehensive literacy development among Grade 4 learners.

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Table 5
Summary Table on the Average Percentage Scores and Descriptions for Reading Comprehension Indicators after the Implementation of the STORIES Intervention

Indicators	Average Percentage Scores (%)	Description
Literal	81.33	High
Interpretative	86.67	High
Evaluation	82.0	High
Creative	86.67	High
Overall Percentage Score (%)	84.17	**High**

In connection to the results, Ramos (2023) states that their study investigated the effects of using short stories on the reading comprehension of Grade IV pupils, noting significant improvement and a developed love for reading. Similarly, Chen et al. (2021) found that incorporating interactive digital storytelling significantly enhanced reading comprehension and engagement among elementary school students, particularly in both literal and inferential understanding, due to the multimodal nature of the intervention. A study by Agno (2021) also aimed to enhance the reading comprehension of Grade 4 pupils through a storytelling intervention, demonstrating a significant increase in students' comprehension scores and boosting their confidence and motivation to read. These studies collectively underscore the effectiveness of narrative and storytelling approaches in foundational reading skill development.

Adding to this, Lee and Kim (2020) demonstrated that a narrative-based intervention, which encouraged students to create their own stories, led to marked improvements in reading comprehension skills by fostering deeper textual understanding and creative engagement. Lastly, Bala (2022) states their study explored the effectiveness of "Project RSS" in improving the reading comprehension levels of Grade 4 pupils, concluding that engaging students with short stories effectively enhances their reading comprehension skills. Further supporting these findings, Davis and Miller (2024) observed that a structured storyboarding approach, akin to the STORIES framework, notably improved fourth graders' ability to sequence events, identify main ideas, and infer character motivations, thereby significantly boosting their overall reading comprehension proficiency. These combined findings strongly validate the positive impact of story-based and visual strategies, such as the STORIES intervention, on enhancing reading comprehension in young learners.

Research Objective No. 3 Is there a significant impact of the STORIES intervention on improving the reading comprehension of Grade 4 learners?

A total of 30 students participated in this study, wherein their reading comprehension was assessed both before and after the implementation of the STORIES intervention. As shown in Table 6, a comparison of pre-test and post-test scores was conducted to evaluate the effectiveness of the intervention. The mean score for the pre-test was 7.73 with a standard deviation of 2.46, indicating moderate variability in the students' initial spelling performance. Following the application of the STORIES intervention, the mean score increased significantly to 16.83, while the standard deviation decreased to 1.88. This reflects not only an overall improvement in reading comprehension but also a more consistent level of performance across the group.

To determine whether this difference was statistically significant, a t-test for dependent samples was conducted, $t(28)= 27.6$, $p<.001$. Since the p-value is well below the significance level of ($\alpha=0.05$), the null hypothesis—stating that there is a significant difference between the pre-test and post-test scores. The computed Cohen's d was 5.04, which indicates an extremely large effect size. This suggests that the intervention implemented in the study had a very strong impact on learners' performance. This result highlights the effectiveness of the STORIES intervention and its potential to significantly enhance the spelling ability of the students.

Table 6
Significant Difference Between the Pre-test and Post-test Scores

Type of Test	*N*	*df*	*Mean*	*Mean difference*	*SD*	*t-value*	*P-value*	*Cohen's d*	*Decision a=0.05*
Pre-Test	30	29.0	38.67	9.10	2.46	27.6	<.001	5.04	Significant
Post-Test	30		84.17		1.88				

These findings confirm a statistically significant improvement in students' spelling proficiency following the STORIES intervention. The substantial increase in mean scores, along with the high t-value and low p-value, provides strong evidence of the intervention's effectiveness. In conclusion, the STORIES intervention demonstrates a meaningful positive impact on students' comprehension skills. Based on these results, educators are encouraged to consider integrating the STORIES approach

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into their instructional practices to enhance reading comprehension in the classroom.

In connection to the result, De Guzman et al. (2022) found reciprocal teaching and explicit instruction to be highly effective for reading comprehension. Although their systematic review focused on children and adolescents with autism spectrum disorder (ASD), these strategies are highly relevant and adaptable for Grade 4 neurotypical students who are at a critical stage of transitioning from learning to read to reading to learn. The study emphasized the value of structured, interactive interventions in enhancing comprehension abilities in elementary school learners.

Moreover, Hicks (2020) conducted a quantitative investigation into reading intervention programs among middle school students with learning disabilities. Despite the older focus group, the core components of successful interventions—systematic instruction, skill repetition, and scaffolded support—were found to be applicable to younger learners, such as Grade 4 pupils, especially those reading below grade level. This highlights the importance of consistent, data-driven practices to improve comprehension skills across different age groups.

Additionally, Caponayan et al. (2023) introduced a multifaceted reading intervention that involved activating prior knowledge, repeated readings, oral reading activities, and guided questioning. While initially implemented with Grade 7 students, its design is particularly relevant to the developmental needs of Grade 4 learners. The study showed notable improvements in comprehension, vocabulary acquisition, and engagement, underscoring the efficacy of combining multiple evidence-based techniques to cultivate a robust comprehension foundation in elementary learners.

Research Objective No. 4: What insights can be drawn from the implementation of the STORIES intervention regarding its effectiveness in enhancing students' reading comprehension?

To answer this research question, in-depth interviews were conducted with the participants. Probing questions were asked to elicit their responses regarding their observation and experiences with the impact of the STORIES intervention in improving reading comprehension among grade 4 students. The major themes and sample statements for research question number 4 are presented in Table 7. Participants shared their responses about their own experiences and observation of the intervention. From the answers of the participants, six major themes emerged: (1) visual aids enhance story understanding and engagement, (2) story mapping develops comprehension and structure awareness, (3) improved reading confidence and comprehension skills, (4) enjoyment and motivation in interactive learning, and (5) better recall and retelling of story elements.

Table 7
Insights of Students in the Use STORIES Intervention in Improving Reading Comprehension of Grade 4 Students

EMERGING THEMES	SUPPORTING STATEMENT
Visual Aids Enhance Story Understanding and Engagement	• *"I liked the pictures because they showed me what the characters were doing, so even if I didn't understand all the words, I still knew what was happening in the story."* – **IDI-01** • *"When our teacher told the story and used actions and voices, I could really follow what was going on. It made the story more exciting and easier to understand."* - **IDI-02** • *"Seeing the pictures helped me imagine the story in my head. I knew when the character was sad or happy because of how the pictures looked."* - **IDI-03** • *"Storytelling with pictures is more fun than just reading. I listen more when I see the colorful drawings and how they match the story."* - **IDI-07** • *"When we watched the story on the screen with voices and pictures, I understood it better than just reading alone from the book."* - **IDI-08**
Story Mapping Develops Comprehension and Structure Awareness	• *"I learned how to break the story into parts like beginning, middle, and end. That helped me understand the whole story better."* - **IDI-01** • *"With the story map, I can write who the characters are, what the problem is, and how it ends. It makes me feel like a detective!"* - **IDI-02** • *"The map shows the important parts. I now know that every story has a setting, characters, a problem, and a solution."* - **IDI-04** • *"Using story maps helped me answer questions after reading because I already wrote the answers in the map."* - **IDI-05** • *"I like drawing arrows and writing short words in the map. It helps me remember the story when I look at it again."* – **IDI-07**
	• *"Before, I just read without thinking much. Now, I try to understand what's happening and ask myself questions."* - **IDI-01**

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Improved Reading Confidence and Comprehension Skills	• *"My reading became better because I now take time to understand the story, not just read fast."*- **IDI-02** • *"Reading is not boring anymore because I know how to use story maps and look at pictures to help me."* - **IDI-05** • *"I can now explain the story in my own words after reading, and my teacher says that's very good."* - **IDI-06** • *"I feel proud when I can answer the comprehension questions. I didn't do that before because I was always guessing."* - **IDI-08**
Enjoyment and Motivation in Interactive Learning	• *"I enjoyed drawing story maps the most because I can use colors, draw characters, and it helps me remember the story well."* - **IDI-01** • *"Storytelling time was the best! I like when our teacher tells the story with actions and voice."* - **IDI-02** • *"Working with a partner to do the story map was fun because we shared our ideas and helped each other."* - **IDI-03** • *"I liked the part where we made our own ending to the story. It let me use my imagination."* - **IDI-04** • *"I liked it when we made up our own stories using pictures and told them to the class. That was exciting!"* - **IDI-08**
Better Recall and Retelling of Story Elements	• *The visual storyboards helped me remember the characters, setting, and what happened because we put it all in the story map."* – **IDI-01** • *"After reading, we always talked about what happened, and drawing it made it stick in my head."* – **IDI-02** • *"The beginning, middle, and end are easier to remember because we always write them in the story map."* - **IDI-04** • *"When I think of a story, I see the map in my head and the pictures we used, so I remember it better."* – **IDI-05** • *"Sometimes I even tell the story to my parents at home, and I can say it from start to end because I remember it well."* - **IDI-07**

Conclusion Reading comprehension is a cornerstone of academic success, and for Grade 4 students, developing robust comprehension skills is paramount. Various pedagogical approaches have been explored to foster these abilities, with a consistent emphasis on engaging students actively in the learning process. This exploration delves into five prominent themes – the power of visual aids, the effectiveness of story mapping, improved reading confidence, enjoyment and motivation, and better recall drawing upon recent research to highlight their significant contributions to improving reading comprehension.

First, Visual Aids Enhance Story Understanding and Engagement. The integration of visual elements in reading materials has long been recognized for its capacity to make abstract concepts more concrete and to capture learners' attention. A study by Arisanti and Hermawan (2023) underscored the positive attitudes of students towards visual aids in reading comprehension, revealing a strong correlation between their use and improved understanding. Furthermore, Panomio (2023) highlighted the effectiveness of using visual aids in improving the reading comprehension of Grade 11 HUMSS students, demonstrating their broad applicability across different grade levels. Visuals, whether images, diagrams, or even mental visualizations, serve as powerful tools to aid memory recall by creating strong mental associations and stimulating various parts of the brain. This multi-sensory approach can significantly boost comprehension and retention, especially for visual learners, making the reading experience more stimulating and less intimidating.

Second, Story Mapping Develops Comprehension and Structure Awareness. Story mapping, as a graphic organizer, provides a visual framework for students to deconstruct narratives and grasp their underlying structure. Research by Sari et al. (2025) demonstrated a significant difference in students' reading comprehension skills before and after the application of story mapping, indicating its effectiveness in teaching narrative text. Similarly, Momo (2020) confirmed that the story mapping strategy significantly improved students' reading comprehension. This technique empowers students to identify key elements such as characters, setting, plot, problem, and solution, thereby fostering a deeper understanding of how stories are organized. By visually mapping out these components, students gain a clearer picture of the narrative's flow and relationships, which is crucial for building robust comprehension skills.

Moreover, the synergistic effect of these techniques extends to fostering Improved Reading Confidence and Comprehension Skills. When students are equipped with strategies like visual aids and story mapping, they experience greater success in understanding texts. This success, in turn, fuels their confidence

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in their reading abilities. For instance, Hussain and Khan (2022) found that pictures engage children, facilitating easier and more effective language acquisition, which directly contributes to a sense of accomplishment and improved confidence. Additionally, studies on reading motivation consistently show that positive experiences, often facilitated by effective comprehension strategies, lead to increased confidence and a willingness to engage with more challenging texts. This positive feedback loop encourages further reading and deeper engagement.

Coupled with enhanced confidence is a heightened Enjoyment and Motivation in Interactive Learning. The dynamic nature of storyboarding, combined with the visual appeal of illustrations, transforms reading from a passive activity into an interactive experience. While specific studies on "Paradigma Press (2024)" were not found, the broader consensus in educational research supports that interactive learning strategies, such as those that involve questioning, predicting, and visualizing, significantly impact critical thinking and engagement. For example, a study by Fitri and Rahmat (2023) on contextualized storytelling with a dual-code approach, which involves both text and visuals, indicated significant improvements in reading comprehension, suggesting that interactive and multi-modal approaches enhance enjoyment and motivation. When students are actively involved in creating and interpreting visual representations of stories, the learning process becomes more enjoyable, leading to increased motivation and a stronger desire to read independently.

Finally, the application of storyboarding techniques inherently leads to Better Recall and Retelling of Story Elements. By visually organizing the sequence of events and identifying key characters and plot points, students are better equipped to remember the narrative. Research by Fitri and Rahmat (2023) specifically demonstrated that contextualized storytelling with a dual-code approach (like text and visuals) significantly improved students' reading comprehension and word recall compared to traditional methods. Similarly, the work of Hussain and Khan (2022), while focused on language acquisition, also implicitly supports the idea that visual aids enhance memory and recall, as children are more likely to remember stories accompanied by engaging pictures. This ability to recall and retell stories not only demonstrates a deeper level of comprehension but also strengthens oral language skills, providing a holistic improvement in literacy.

CONCLUSION

Based on the results of the study, it concludes that the STORIES intervention had a meaningful and positive effect on the reading comprehension abilities of Grade 4 students. Before the intervention, students exhibited low levels of reading comprehension, particularly in identifying main ideas, making inferences, and understanding details within a text. After the intervention, there was a noticeable improvement in their comprehension performance across all measured areas, raising their abilities to a more proficient level. These results demonstrate that the STORIES intervention is an effective instructional approach for enhancing elementary students' reading comprehension and addressing common difficulties in text understanding.

Qualitative insights gathered from in-depth interviews further reinforced the quantitative findings by providing a deeper understanding of the students' experiences and perceptions following the implementation of the STORIES intervention. The interviews revealed that students not only showed clear improvement in their reading comprehension skills but also gained increased confidence in engaging with texts. This improvement in self-assurance translated into heightened motivation and greater interest in reading activities. Several students shared that they began to enjoy reading more and applied the STORIES strategies even during independent reading. They found that breaking down stories into structured elements—such as setting, theme, order of events, resolution, inference, ending, and summary—made reading tasks more manageable and less overwhelming. Importantly, students also provided suggestions to further improve the STORIES intervention, such as including more interactive reading materials and offering opportunities for group discussion. These learner perspectives emphasize the value of involving students actively in their learning process and highlight the importance of adapting instructional approaches to better fit their interests and learning styles.

RECOMMENDATION

Based on the findings of this study, it is recommended that the STORIES intervention (Storyboard Techniques for Optimal Reading Engagement and Skills) be systematically integrated into Grade 4 reading instruction to address common challenges in reading comprehension among elementary learners. Teachers should adopt and adapt the core strategies used in the intervention—such as story mapping, visual sequencing, collaborative storytelling, and character-role illustration—to enhance students' engagement and deepen their understanding of narrative texts. The integration of these storyboard techniques allows learners to actively construct meaning by organizing story elements like setting, characters, problem, and resolution in a visual and structured manner.

To ensure sustained impact, the development of a school-wide reading enrichment program that incorporates storyboarding techniques is strongly encouraged. Such a program can create consistency in comprehension instruction while fostering creativity, imagination, and critical thinking among young readers. Additionally, educators are encouraged to integrate technology-based tools, including digital story mapping apps, animated storyboards, and interactive reading platforms, to cater to diverse learning styles and increase motivation.

A learner-centered approach should also be emphasized, giving students opportunities to create their own storyboards, reflect on their interpretations, and share retellings through peer

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collaboration. These activities not only build comprehension skills but also promote confidence, oral fluency, and enjoyment in reading. Finally, ongoing professional development should be provided to equip teachers with innovative, evidence-based techniques in interactive and visual reading instruction, ensuring alignment with the evolving needs of 21st-century learners.

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