

Enhanced Project Peer-Assisted Intervention for Reading (PAIR) and Reading Comprehension Skills of Grade 4 Learners

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Article Details:

Received: 5 May 2026

Revised: 16 May 2026

Accepted: 22 May 2026

Published: 31 May 2026

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Recommended Citation:

Asuncion, P. A., Agustin A. A. (2026) Enhanced Project Peer-Assisted Intervention for Reading (PAIR) and Reading Comprehension Skills of Grade 4 Learners. The International Review of Multidisciplinary Research. 1 (6), 662-668.
<https://doi.org/10.5281/zenodo.20555093>

Index Terms:

Peer-assisted learning, Project Peer-Assisted Intervention for Reading (PAIR), reading comprehension

Abstract. The purpose of this study is to assess the effects of enhanced project peer assisted intervention for reading (PAIR) on learners' reading comprehension skills; literal, inferential and critical comprehension areas, among grade four learners from Beti Elementary School during the academic years of 2025–2026. A pre-experimental one group pretest – posttest was used as the research design to evaluate learners' performance. Learners who are classified as non-grade level ready based on their Phil – IRI results were selected as the participants. Purposive sampling was used to select Seventeen non-grade level ready learners. The pretest and post test results were analyzed by computing the mean, standard deviation, and paired sample t-test. The result showed that learners have poor overall comprehension with a mean score of 13.71 before the intervention. There was an improvement after the intervention with a mean of 18.00 which can be described as satisfactory. Statistically, there were significant improvements in both literal ($t = -6.96, p = .000$) and critical comprehension ($t = -3.03, p = .008$). However, no statistical difference was observed in inferential comprehension ($t = -1.38, p = .188$). Therefore, the findings of this study indicate that Enhanced Project PAIR is effective in enhancing learners' literal and critical reading skills through structured peer assisted activities and immediate feedback. In addition to longer periods of interventions, developing learners' ability to make inference require explicit instructional support to develop learners' higher order thinking skills to include questioning. This study also demonstrates how important it is to integrate peer-assisted strategies along with target activity that supports learners to reason while addressing unevenness of skill development in reading comprehension.

Introduction

Reading is the foundation of all learning in school, and it serves as primary access to lifelong knowledge. When learners fail to master reading at the basic level their performance across subject areas is severely at risk. Therefore, effective interventions for improving reading skills remain the dominant challenge for teachers.

Reading comprehension involves three main components that work together; literal comprehension deals with the details that are stated directly in the text. Inferential comprehension requires readers to draw conclusions based on the information presented in the text. Critical comprehension is the most advanced type of comprehension which permits readers to appraise the credibility of the text, analyze assumptions and understand the author's point of view. Learners must demonstrate an ability to use these three types of comprehensions to become independent and thinking readers.

According to UNESCO, there are an estimated 617 million children and adolescents worldwide who do not have achieved minimum proficiency levels in reading. This global problem exists here in the Philippines where the Department of Education has been struggling with reading poverty. Data from the 2021 Philippine Informal Reading Inventory (Phil-IRI) indicates that nearly 30% of Grade 4 learners cannot read with comprehensive understanding.

The above statement is true in the Schools Division of Nueva Vizcaya particularly in Beti Elementary School. Based on the Beginning of the School Year (BOSY) PHIL-IRI pre-test result for S.Y. 2025-2026, only 22.74% of the 9,006 Grade 4 learners

in the division were considered grade level ready; while 77.26% were non-grade level ready. Although these learners may recognize words, they struggle significantly with higher-order thinking skills required for inferential and critical understanding. This gap underscores the need for targeted instructional strategies that develop not only decoding skills but also higher-order thinking and comprehension skills essential for better academic performance.

Despite the initiative of DepEd to implement the DepEd ARAL Program through DEPED order no. 13, s. 2023 which provides targeted literacy interventions via catch-up Fridays and reading camps, substantial gaps remain in developing higher-order comprehension skills among struggling readers especially those from rural and underserved communities. There is a gap in how structured peer-mediated interventions specifically impact on the three domains of comprehension, literal, inferring, and critical, among Grade 4 learners in localized rural context. At Beti Elementary School, out of 48 Grade 4 learners assessed in reading, 60.42% passed the screening process and were considered grade level ready, while 39.58% considered non-grade level ready and needed additional support. These learners may recognize words, they experience difficulty significantly with higher-order thinking skills required for inferring and critical understanding which is the same patterns found in division data.

Theoretical frameworks used in this study emphasize cognitive self-regulation and structural benefit of peer-mediated approaches to improve reading comprehension. Metacognitive theory by Flavell (1979) posits that awareness and regulating one own's cognitive process is important. In terms of reading, metacognition refers to monitoring comprehension, identifying when comprehension breaks down and using strategies to correct it. This is consistent with Sociocultural Theory by Vygotsky (1978) who argues that learning occurs through social interaction within a learner's Zone of Proximal Development (ZPD). Project PAIR allowed learners to develop these skills by reflecting on their understanding of the text and actively helping their peers when they encounter obstacles. Through peer dialogue and scaffolded questions both tutors and tutees engage in self-regulation, strategic thinking and collaborative meaning-making which support their abilities to understand and retain information and improve their literal, inferential and critical reading skills.

The PAL (Peer Assisted Learning) model by Fuchs & Fuchs (2005) provides evidence that structured peer tutoring is an effective method for improving academic performance, particularly in reading. Bandura's (1977) Social Learning Theory additionally provides evidence that learners acquire new behavior and skills through observation imitation and modelling. By pairing proficient readers with struggling readers, project pair provided repetitive opportunity for practice real-time feedback and personalized attention. This model further emphasized a mutual benefit based on reciprocal teaching framework by Palincar & brown (1984), where tutors develop mastery by teaching and modeling strategies such as summarizing questioning clarifying and predicting, while tutees enhance their reading skills through continuous guidance and cognitive apprenticeship. Added to this, the intervention created positive interdependence and individual accountability, key features of Johnson & Johnson's (1999) Cooperative Learning Theory that guarantee both tutor and tutees responsible for each other's success in learning.

Based on this above statement the general objective of this study is to evaluate whether the enhanced project peer assisted intervention for reading (project PAIR) will improve the reading comprehension skills of Grade 4 learners at Beti Elementary School. This study specifically explores how project PAIR impacts on the literal, inferential, and critical comprehension domains of seventeen non-grade-level ready graders at Beti Elementary School during second semester of SY 2025-2026. All respondents were selected based on Phil-IRI standard results, 8 learners were at frustration level, 9 learners were at instructional level, 2 learners were 2 grades lower than their current grade, 6 learners were 3 grades lower than their current grade. To address the literacy gap enhanced project peer assisted intervention for reading (PAIR) was applied for two weeks after following the current curriculum guide. The study used a pre-experimental design style — one group pretest posttest design. Enhanced Project PAIR was done by matching proficient “peer-tutors” with struggling “peer-tutees” to participate collaborative reading activity. six (6) stories were used as material for the intervention: four (4) stories from Phil-IRI tool and two (2) stories made by the researcher based on the current curriculum guide.

Research Questions

This study sought to answer the following research questions:

1. What is the level of reading comprehension skills of the respondents along literal, inferential, and critical domains before the implementation of Enhanced Project PAIR?
2. What is the level of reading comprehension skills of the respondents along literal, inferential, and critical domains after the implementation of the Enhanced Project PAIR?
3. Is there a significant difference in the reading comprehension skills of the respondents before and after the implementation of the Enhanced Project PAIR?

The primary objective of this study is to assess the effectiveness of the Enhanced Project Peer-Assisted Intervention for Reading (PAIR) in enhancing the reading comprehension skills of Grade 4 learners at Beti Elementary School.

Null Hypothesis

There is no significant difference in the reading comprehension skills of the Grade 4 learners along literal, inferential, and critical domains before and after the implementation of the Enhanced Project Peer-Assisted Intervention for Reading (Project PAIR).

Methodology

Research Design

The research used a one-group pretest-post-test quasi-experimental research design to assess the effectiveness of Enhanced Project PAIR (Peer-Assisted Intervention for Reading) in improving the reading comprehension of Grade 4 learners at Beti Elementary School. This design is appropriate as it allows for the measurement of changes in reading comprehension within the same group of learners, providing a clear evaluation of the intervention's impact over time.

Research Environment

The study was conducted at Beti Elementary School, a public school in a rural community under the Aritao II District, Schools Division of Nueva Vizcaya. The school offers kindergarten to Grade 6 and serves learners with diverse socio-economic backgrounds and varying levels of home-based academic support. Despite resource constraints, Beti Elementary School actively implements reading programs to improve literacy. The presence of Grade 4 pupils with identified comprehension deficits made the school an appropriate setting for evaluating the effectiveness of Enhanced Project PAIR.

Respondents

The respondents of this study consisted of seventeen (17) learners from Beti Elementary School for the School Year 2025 - 2026, with ten (10) or 43.48% from the Mapagmahal class and seven (7) or 29.17% from the Matulungin class. These learners were purposively selected based on regular enrollment, parental consent, and Phil-IRI pretest results. Based on Philippine Informal Reading Inventory (Phil-IRI) standards, the respondents included nine (9) learners at the Instructional level and eight (8) learners at the Frustration level. Among those at the Frustration level, two (2) learners were reading two grade levels below, and six (6) learners were reading three grade levels below. All 17 participants were identified as non-grade-level-ready and were available throughout the intervention period.

The frequency and percentage distribution of respondents is shown the table.

Group	Frequency	Percentage
Grade IV- Mapagmahal	10	58.82 %
Grade IV-Matulungin	7	41.17 %
Total	17	100 %

Table 1: Frequency and Percentage Distribution of the Respondents

Sampling Procedure

Purposive sampling is used in this study to choose the 17 grade four learners from Beti elementary school who took part in the study. The learner were selected using selection method for the following reasons: (a) the Phil-IRI pre-test showed that they were below their expected level of reading ability; (b) are currently enrolled at grade level four during SY 2025–2026; (c) had obtained written parental consent to participate in this research; and (d) have attended classes regularly. Using a purposive sampling strategy enabled the researcher to specifically identify those learners who would be best suited to receive an enhanced project PAIR and would therefore provide useful data regarding the success of project PAIR in enhancing the reading comprehension abilities of these targeted learners. Additionally, by selecting learners who were experiencing known reading problems, the research ensured that its findings reflected the specific needs of the target population while also adhering to all applicable ethical guidelines for selecting participants (Johnson et al., 2020).

Research Instruments

A 30-item researcher-made test was used to assess learners' reading comprehension across literal, inferential, and critical levels. The test questions were constructed by the researcher using 4 Phil-IRI stories from the official Phil-IRI tool and 2 additional short stories developed by the researcher. Pretest and posttest were administered to measure improvements after the implementation of Enhanced Project PAIR. The instrument underwent content validation by a literacy expert and pilot testing at Comon Central School. Reliability was established using Kuder-Richardson Formula 20 (KR20), with a coefficient of 0.775 indicating acceptable internal consistency. A Table of Specification (TOS) was developed to align test items with the targeted cognitive levels. The 6 stories, along with leveled texts, comprehension questions, and fluency activities, were also used as instructional materials during peer-assisted reading sessions. All materials were validated by a literacy expert to ensure appropriateness for the learners.

Statistical Treatment of Data

Mean and Standard Deviation were used to determine the average and variability of the learners' pretest and posttest reading comprehension scores. A Paired Sample t-test was used to compare the pretest and posttest Phil-IRI scores of the same learners. The alpha level was set at 0.05 to determine if the difference was statistically significant.

Results and Discussion

Primary Outcome: Level of reading comprehension skills of the respondents along literal, inferential, and critical domains before the implementation of Enhanced Project PAIR?

Problem 1. Level of reading comprehension skills of the respondents before the implementation of Enhanced Project PAIR

Reading Comprehension Domain	<i>M</i>	<i>SD</i>	Performance Level
Literal	5.59	2.48	Satisfactory
Inferential	4.59	1.87	Poor
Critical	3.53	1.33	Poor
Total	13.71	4.75	Poor

Note. M = Mean; SD = Standard Deviation.

Table 2: Summary of respondents' level of reading comprehension skills before the implementation of Enhanced Project PAIR

As shown in Table 2, before the intervention, learners gained a total mean score of 13.71 (*SD* = 4.75), indicating a Poor level of reading comprehension. Literal comprehension was Satisfactory (*M* = 5.59, *SD* = 2.48), while both Inferential (*M* = 4.59, *SD* = 1.87) and Critical comprehension (*M* = 3.53, *SD* = 1.33) were Poor.

The results suggest that learners could recall explicit information but struggled with higher-order tasks such as making inferences and evaluating content. The high standard deviation also shows wide variability in performance. These findings align with literature stating that Filipino learners often face difficulty in inferential and evaluative comprehension due to limited exposure to higher-order thinking tasks. The identified gap justified the implementation of Enhanced Project PAIR to strengthen deeper comprehension skills among Grade 4 learners. Primary Outcome: Level of reading comprehension skills of the respondents along literal, inferential, and critical domains after the implementation of Enhanced Project PAIR?

Problem 2. Level of reading comprehension skills of the respondents after the implementation of Enhanced Project PAIR

Reading Comprehension Domain	<i>M</i>	<i>SD</i>	Performance Level
Literal	7.88	2.15	Very Satisfactory
Inferential	5.29	2.47	Satisfactory
Critical	4.82	2.10	Poor
Total	18.00	6.09	Satisfactory

Note. M = Mean; SD = Standard Deviation.

Table 2: Summary of respondents' level of reading comprehension skills after the implementation of Enhanced Project PAIR

After the implementation of Enhanced Project PAIR, respondents obtained a total mean score of 18.00 (SD = 6.09), reflecting a Satisfactory level of reading comprehension. Literal comprehension improved to Very Satisfactory (M = 7.88, SD = 2.15), while Inferential comprehension reached Satisfactory (M = 5.29, SD = 2.47). Critical comprehension remained at the Poor level (M = 4.82, SD = 2.10).

The findings demonstrate that the program had a favorable impact on the learner's ability to identify specific information and draw basic inferences. However, it appears that an emphasis on critical understanding resulted in less significant gains for learners. This is consistent with what Paul & Elder (2019) stated about critical thinking requiring long-term exposure and direct teaching. In addition, the large standard deviation of 6.09 suggests that while many learners made substantial progress toward the learning objectives, other learners were progressing at a slower rate.

Primary Outcome: Significant difference in the reading comprehension skills of the respondents before and after the implementation of the Enhanced Project PAIR

Problem 3. Paired sample t-test results for reading comprehension skills before and after the implementation of Enhanced Project PAIR

Reading Comprehension Domain	Test	Mean	Std Deviation	Computed t-value	p-value	Remarks
Literal	Pretest	5.59	2.48	-6.96	0.000	Significant
	Posttest	7.88	2.14			
Inferential	Pretest	4.59	1.87	-1.38	0.188	Not Significant
	Posttest	5.29	2.47			
Critical	Pretest	3.53	1.33	-3.03	0.008	Significant
	Posttest	4.82	2.10			
Total	Pretest	13.71	4.75	-6.53	0.000	Significant
	Posttest	18.00	6.09			

Note: Significant at $p < .05$.

Table 4: Summary on the difference in respondents' level of reading comprehension skills before and after the implementation of Enhanced Project PAIR

Table 4 demonstrates that Enhanced Project PAIR significantly increased learners' overall reading comprehension as evidenced by the enhanced mean on the posttest ($p < .001$; $t = -6.53$). Additionally, there were significant improvements in both literal and critical comprehension, which suggests that the intervention was successful in enhancing foundational and evaluative skills. Although there were no statistically significant improvements in inferential comprehension ($p = .189$; $t = -1.38$), it is possible that this skill develops over time and requires additional prolonged exposure. These findings are consistent with those of Duke & Cartwright (2021); Cain & Oakhill (2019), who also found that although the project was successful for improving literal and critical comprehension, additional development of the program would be necessary to enhance inferential comprehension.

Conclusion and Recommendations

Conclusions

Based on the significant findings of the study the following conclusions are drawn:

The learners have basic reading skills; however, they do not have the necessary skills to be able to interpret, analyze or evaluate texts. The fact that there is an imbalance in the use of literal skills versus higher-order skills will support the relevance and necessity of implementing the Enhanced Project PAIR to assist with improving the reading comprehension skills of learners.

The Enhanced Project PAIR demonstrated a positive effect on the overall reading comprehension of learners, primarily in terms of literal and critical understanding based upon the high increases in the posttest compared to the pretest. The intervention had limited success with regards to promoting inferential comprehension given there were no statistical differences noted within the pretest/post test data which indicated that developing higher order thought processes requires longer-term and much more targeted educational support.

The Enhanced Project PAIR was an effective intervention in improving the reading comprehension skills of Grade 4 learners, particularly in literal and critical domains. The results clearly indicate that structured peer-assisted activities can strengthen foundational understanding and evaluative thinking, although they were less effective in producing immediate gains in inferential comprehension. Thus, while the program successfully met its objective of enhancing overall reading performance, it requires further refinement to support higher-order inferential skills.

The Enhanced Project PAIR was a useful instructional approach to improve the general reading comprehension of Grade 4 learners. Although the project helped to enhance literal and critical reading comprehension skills, the projects' minimal improvement in inferential comprehension clearly indicates that more focused methods and additional instructional time are needed to help Grade 4 learners build their higher-level thinking abilities. Therefore, peer-assisted learning demonstrated some benefit in enhancing both initial and evaluative reading skills; however, further development is required to better support developing higher-level or inferential comprehension.

Recommendations

Based on the significant findings and conclusions drawn from this study, the following recommendations are proposed:

1. Teachers are encouraged to integrate peer-assisted and interactive reading strategies, such as the Enhanced Project PAIR, to sustain gains in critical comprehension and strengthen inferential comprehension skills. School administrators may support this through continuous professional development and by providing adequate instructional resources that promote higher-order comprehension.
2. Teachers may integrate other strategies for teaching critical reading, such as guided analysis, questioning techniques, and reflective discussions, alongside peer-assisted activities to strengthen higher-order thinking skills. School administrators may support the continuous implementation and enhancement of Project PAIR by providing training and resources that address diverse learner needs.
3. Teachers may continue using the Enhanced Project PAIR while incorporating more instructions and guided practice focused on inferential comprehension, such as higher-order questioning and reasoning tasks. School administrators may support this effort by providing training and resources that strengthen the implementation of peer-assisted and differentiated reading strategies.
4. For learners are encouraged to actively participate in peer-assisted reading activities and practice self-directed strategies to improve their comprehension. They may engage in self-questioning, predicting outcomes, and drawing conclusions while reading to strengthen inferential skills. They are also advised to read a variety of texts and collaborate with peers to discuss implied meanings and evaluate content, which will help develop higher-order thinking skills across all comprehension domains.
5. For future researchers, it is recommended to explore longer intervention periods or combine peer-assisted approaches with other instructional strategies to further improve inferential comprehension outcomes, since this domain showed no significant improvement in the present study. Researchers could develop a better understanding of the long-range results for learners participating in peer-assisted programs. Researchers can also examine how well these peer-assisted models are suited to various age groups of learners. In addition to testing whether an intervention is effective with one school's population of learners, future researchers could test the intervention with multiple schools or large enough samples to determine if it works equally effectively across other types of learners in different learning environments.
6. It is suggested for both curriculum developers to include some of the peer-assisted learning methods discussed as part of the intervention within standard reading curricula for third through fifth grade levels. In addition, they can develop materials at an appropriate level for learners to use, with a focus on all three types of comprehension -- literal, inferential and critical --to provide structure to learner's peer-practice time and allow for equitable development of skills.

Acknowledgement

The researcher expresses profound gratitude to all individuals and institutions whose support, guidance, and encouragement made this study possible. Special appreciation is extended to the school administration, teaching personnel, and learners who participated in the implementation of this research. Their invaluable contributions and cooperation were instrumental to the successful completion of this study.

Funding

This research received no external funding from any public, commercial, or not-for-profit funding agency, and no organization provided financial support for the conduct of the study, authorship, or publication of this article.

Competing Interests Statement

The author declares that she has not known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.