

Development of Highly Skilled Readers Using Metacognitive Strategies and Portfolio Evaluation (Essay)

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Abstract

Reading comprehension is essential for academic success and lifelong learning, yet many elementary students struggle with low comprehension and slow reading speeds, necessitating effective instructional interventions. This study aimed to develop highly skilled readers by utilizing seven metacognitive reading strategies and portfolio evaluation through essays among Grade 5 pupils of Lagaosian Elementary School during the 2023–2024 school year. Utilizing descriptive and experimental research designs, the study assessed the effectiveness of activating, summarizing, monitoring and clarifying, visualizing and organizing, searching and selecting, questioning, and inferring. Data was gathered through pretests and posttests and statistically analyzed using mean, t-test for correlated samples, and Analysis of Variance (ANOVA). Initial pretest results showed learners performed best in the Questioning strategy (mean = 80.60, "Satisfactory") and weakest in Inferring (72.20, "Did Not Meet Expectations"). Posttest results revealed significant improvements across all seven strategies, with mean gains ranging from 7.93 to 15.10. Questioning achieved the highest posttest score (95.70, "Outstanding") and the highest mean gain (15.10), while Inferring remained the lowest (81.20, "Satisfactory") with a 9.00 mean gain. Statistical analyses confirmed a significant difference between pretest and posttest performances, identifying Questioning as the most effective strategy. Ultimately, the integration of metacognitive reading strategies through essay portfolios significantly enhances students' reading abilities and comprehension. While strategies like questioning yield outstanding results, educators must provide targeted instructional support to help students develop complex, higher-order skills such as inferring.

Keywords: *reading comprehension, metacognitive reading strategies, portfolio evaluation, elementary education, essay*

1. Introduction

Reading holds paramount importance in elementary education, serving as the foundation for academic success, critical thinking, and lifelong learning. Proficient reading skills are essential not only for mastering diverse subject areas but also for navigating daily tasks and engaging with the world. By nurturing a love for reading and providing students with the necessary cognitive tools, educators foster independent thinking, creativity, and empathy. However, as literacy demands increase across all academic disciplines, there is a pressing need for effective instructional strategies that promote the development of highly skilled readers capable of comprehending and analyzing complex texts.

Despite its importance, educators face significant challenges in developing students' reading comprehension. In the Philippines, factors such as a lack of reading materials, teacher incompetence, poor student health, and the integration of at-risk learners severely impact reading proficiency (Larioque, 2019). Many elementary students struggle with basic skills—such as word recognition, phonics, and fluency—which limits their overall comprehension and leads to frustration (Rivera & Aggabao, 2020; Tomas et al., 2021). Furthermore, a diminished enthusiasm for reading, exacerbated by the shift to remote learning and competition from electronic devices, has hindered literacy development (Idulog et al., 2023). Students frequently lack the critical thinking skills required to analyze and evaluate texts (King, 2023) and struggle with advanced vocabulary and complex concepts (Abella, 2023). Consequently, these foundational deficits lead to academic underperformance, widened achievement gaps, and limited future opportunities (Librea et al., 2023).

This national concern is directly observed at Lagaosian Elementary School, where Grade 5 pupils exhibit alarmingly low comprehension levels and slow reading progress. These localized difficulties highlight a critical gap in literacy development that, if left unaddressed, threatens the students' long-term academic achievement and socio-emotional well-being. Addressing this gap requires targeted, evidence-based interventions to support struggling learners in becoming proficient, strategic readers.

To address these challenges, this study is anchored in multiple complementary educational theories. Constructivism posits that learning is an active process where individuals construct knowledge, heavily relying on metacognition—the awareness and regulation of one's own thinking. This is supported by Vygotsky's sociocultural theory, which emphasizes collaborative learning within the zone of proximal development, allowing students to co-construct knowledge through guided interaction. Additionally, schema theory highlights the importance of activating prior knowledge, cognitive load theory emphasizes managing instructional design to optimize learning, and self-regulated learning theory empowers students to take ownership of their progress. Together, these frameworks advocate for an active, socially supported, and reflective approach to reading instruction.

Central to these theoretical perspectives is the application of metacognitive reading strategies. Metacognitive strategies require students to "think about their thinking" before, during, and after reading, which is crucial for deeper comprehension and critical analysis (Babayigit,

2019; Bernardo & Mante-Estacio, 2023). Developing highly skilled readers relies on seven key strategies: activating, summarizing, monitoring and clarifying, visualizing and organizing, searching and selecting, questioning, and inferring (Kids, 2023). For instance, generating higher-level questions encourages active engagement and analytical interaction with the text (Sophia et al., 2015; Neirotti, 2021; UNC-Chapel Hill Learning Center, 2024). Similarly, visualizing helps organize complex concepts (Almutairi, 2018), while inferring allows students to draw logical conclusions beyond literal meanings, a critical skill for upper elementary grades (Hall et al., 2019). Explicitly teaching these strategies regulates reading behaviors and overcomes comprehension barriers (Wilkinson, 2023).

To effectively measure the impact of these strategies, authentic assessment is required. Portfolio evaluation, particularly through essays, provides a comprehensive, longitudinal method for assessing both reading skills and metacognitive development (Teng et al., 2021). Unlike traditional testing, portfolios allow students to showcase their work, reflect on their progress, and take ownership of their learning (University of Hawai'i at Mānoa, 2024; Hudori et al., 2020). Integrating essays into reading instruction scaffolds students' ability to organize textual evidence and transition from "writing to read" to "reading to write" (Hannah, 2021). By combining essay writing with multisensory techniques, modeling, and collaborative activities, educators can significantly boost motivation and engagement (Fitzpatrick, 2022).

Therefore, this study aims to develop highly skilled readers by utilizing metacognitive strategies and portfolio evaluation (essays) among Grade 5 pupils at Lagaosian Elementary School. By integrating self-regulated reading strategies with authentic, ongoing assessment, this research seeks to address the observed gaps in comprehension and fluency. The findings intend to inform evidence-based instructional practices and educational policies, ultimately fostering a culture of literacy, critical thinking, and academic excellence.

This study focused on the reading performance of the grade 5 pupils of Lagaosian Elementary School, District.

Specifically, it sought to answer to the following questions:

1. What is the level of reading skills of Grade 5 learners before implementing the metacognitive strategies on the selected materials in the reading portfolio?
2. What is the level of reading skills of the Grade 5 learners after implementing the metacognitive strategies?
3. Is there a significant difference in the result of the Pre-test and Post-test of the seven metacognitive strategies?
4. Are there significant differences between and among the reading skills of readers exposed to metacognitive reading strategies?

Hypothesis

Based on the problem, these hypotheses were considered:

1. There is a significant difference in the result of the pretest and posttest of the seven metacognitive reading strategies
2. There significant differences between and among the reading skills of readers exposed to metacognitive reading strategies?

2. Materials and Methods

This study utilized a descriptive and experimental design integrated with pretest-posttest to quantify the effectiveness of metacognitive reading strategies on student comprehension. The participants comprised a purposive sample of 15 Grade 5 pupils from Lagaosian Elementary School in Abra, enrolled during the 2023–2024 academic year. The primary data collection instrument was an assessment portfolio containing 12 targeted essays, pretest, and posttest. To establish content validity and instrument reliability, the instruments were evaluated by a panel of three experts holding master's degrees prior to implementation. The portfolio materials were distributed across pre-intervention, formative, and post-intervention assessments, featuring criterion-referenced questions designed to measure cognitive proficiency across seven specific metacognitive domains: activating, summarizing, monitoring and clarifying, visualizing and organizing, searching and selecting, questioning, and inferring. Performance outcomes were quantified and classified using the standardized grading parameters established by the Philippine Department of Education (DepEd Order No. 08, s. 2015).

The experimental procedure was executed in three phases namely preparation, implementation, and data consolidation commencing in the first academic quarter. Following necessary permissions, the intervention was administered using an iterative instructional model. For each metacognitive strategy, participants first completed a pretest. This process was followed for all the strategies namely Questioning, Monitoring and clarifying, Searching and selecting, Visualizing and organizing, Summarizing, and Inferring each accompanied by essays from the portfolio. Quantitative data were processed utilizing descriptive and inferential statistics. Mean scores were calculated to establish pretest and posttest proficiency levels. Paired-sample t-tests were executed to determine the statistical significance of mean differences between corresponding pretest and posttest scores. Furthermore, a one-way Analysis of Variance (ANOVA) was computed to identify significant differences in instructional efficacy between and among the specific metacognitive reading strategies.

3. Results

This section presents the quantitative findings of the study through structured tables and figures, detailing both the descriptive statistics and inferential analyses utilized to evaluate the efficacy of the implemented metacognitive reading strategies.

The data presented in Table 1 is Grade 5 learners' reading skills before the implementation of metacognitive strategies through essays in their reading portfolio.

Table 1. The Level of Reading Skills of Grade 5 Learners Before Implementing the Metacognitive Strategies on the Selected Materials in the Reading Portfolio

Metacognitive Strategies	Mean	Descriptive Rating
Questioning	80.60	Satisfactory
Monitoring and clarifying	80.07	Satisfactory
Searching and selecting	78.20	Fairly Satisfactory
Visualizing and organizing	77.40	Fairly Satisfactory
Summarizing	76.13	Fairly Satisfactory
Summarizing	76.13	Fairly Satisfactory
Inferring	72.20	Did Not Meet Expectations
Total	77.11	Faily Satisfactory

Norm:

Grading Scale	Descriptors
90-100	Outstanding
85-89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
Below 75	Did Not Meet Expectation

The table highlights the reading skills if Grade 5 learners after implementation of the metacognitive strategies along with essay reading portfolio. Following the implementation of metacognitive strategies through essays, the data reveals improvements in the students' reading skills across the strategies.

Table 2. The Level of Reading Skills of Grade 5 Learners After Implementing the Metacognitive Strategies on the Selected Materials in the Reading Portfolio

Metacognitive Strategies	Mean	Descriptive Rating
Questioning	95.70	Outstanding
Searching and Selecting	91.47	Outstanding
Visualizing and Organizing	91.40	Outstanding
Activating	88.87	Very Satisfactory
Monitoring and Clarifying	88.00	Very Satisfactory
Summarizing	86.60	Very Satisfactory
Infering	81.20	Satisfactory
Overall	89.02	Very Satisfactory

Norm:

Grading Scale	Descriptors
90-100	Outstanding
85-89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
Below 75	Did Not Meet Expectation

The following table signifies the comparison of the pretest and posttest performance of the learners exposed to metacognitive strategies along with essays through paired sample t-test. It was deemed that there is a significant difference between the pretest and posttest of the readers exposed to the different metacognitive strategies

Table 3. Comparison of the Significant Difference Between the Pretest and Posttest Results of the Learners Exposed to Metacognitive Strategies

Metacognitive Strategies	Pretest Mean	Posttest Mean	Mean Gain	t-value	t-prob
Questioning	80.60	95.70	15.10	8.34	<0.01
Searching and selecting	78.20	91.47	13.27	6.91	<0.01
Visualizing and organizing	77.40	91.40	14.00	8.32	<0.01
Activating	75.20	88.87	13.67	5.92	<0.01
Monitoring and clarifying	80.07	88.00	7.93	3.97	<0.01
Summarizing	76.13	86.60	10.47	4.65	<0.01
Infering	72.2	81.20	9.00	5.95	<0.01
Overall	77.11	89.03	11.92	2.13	<0.01

Table 4 presents the results of an analysis of variance (ANOVA) testing significant differences in reading skills among readers exposed to different metacognitive reading strategies wherein they have varying effects on improving reading skills.

Table 4. Summary Of ANOVA Showing Significant Differences Between and Among the Reading Skills of Readers Exposed to Metacognitive Reading Strategies

Metacognitive Strategies	Posttest Mean Rating	F-Value	F-Prob Value
Questioning	95.70 ^a	4.007	0.001
Searching and Selecting	91.47 ^a		
Visualizing and Organizing	91.40 ^a		
Activating	88.87 ^a		
Monitoring and Clarifying	88.00 ^a		
Summarizing	86.60 ^a		
Inferring	81.20 ^b		

4. Discussion

4.1. Level of Reading Skills Before the Implementation of Metacognitive Strategies (Table 1)

Regarding the interpretation of findings, the baseline assessment indicates that prior to the intervention, Grade 5 learners possessed only minimal reading proficiency, yielding an overall pretest mean of 77.11 ("Fairly Satisfactory"). While learners demonstrated foundational competencies in concrete tasks like questioning (80.60) and monitoring (80.07), there was a severe deficit in higher-order comprehension. The inferring strategy yielded the lowest mean of 72.20 ("Did Not Meet Expectations"), underscoring a significant inability to process implicit information or execute abstract reasoning prior to targeted instruction.

In comparison to existing studies, these baseline deficiencies align directly with Rivera and Aggabao (2020), who noted that Grade 5 students frequently struggle with foundational reading fluency, which inherently restricts overall comprehension. Furthermore, the specific deficit in inferring corroborates Abella (2023) and King (2023), who emphasize that elementary students face substantial difficulties with interpretative and critical reading levels, necessitating explicit instructional support to develop these complex cognitive skills. These results carry vital implications for practice and policy, highlighting an urgent need for educational policies that mandate comprehensive baseline literacy diagnostics at the onset of the academic year. Practically, educators must utilize these diagnostics to deploy targeted interventions that explicitly build critical thinking and abstract reasoning, rather than merely focusing on basic decoding and literal recall.

4.2. Level of Reading Skills After the Implementation of Metacognitive Strategies (Table 2)

Following the integration of metacognitive strategies through the essay portfolio, reading proficiency substantially improved to an overall mean of 89.02 ("Very Satisfactory"). The

intervention successfully promoted deeper text engagement, with the questioning strategy achieving an "Outstanding" mean of 95.70. While the inferring strategy improved to a "Satisfactory" level (81.20), it remained the lowest-performing domain, indicating that extracting unstated meanings remains the most demanding cognitive challenge for these learners.

Drawing a comparison to existing studies, the post-intervention success in questioning and visualizing supports the findings of Sophia et al. (2015) and Almutairi (2018), who demonstrated that generating high-level inquiries and mentally mapping textual relationships significantly boost reading engagement and memory retention. The persisting challenge with inferencing, despite improvement, validates Hall et al. (2019), who identified that drawing logical conclusions from implicit data is inherently difficult for upper elementary readers and requires prolonged mastery. The implications for practice and policy suggest that integrating essay-based portfolio evaluations and metacognitive strategies into the standard curriculum is highly effective. Educational administrators should advocate for policy shifts that embed these active reading methodologies into regular classroom instruction, equipping teachers with the frameworks necessary to foster independent, strategic readers.

4.3. Significant Differences Between Pretest and Posttest Results (Table 3)

Inferential statistical analysis confirms a highly significant improvement in reading skills, yielding an overall mean gain of 11.92 ($t\text{-prob} < 0.01$). The questioning strategy exhibited the highest mean gain (15.10 points, $t = 8.34$), demonstrating a rapid acquisition of analytical inquiry skills. Conversely, the inferring strategy exhibited the lowest mean gain (9.00 points, $t = 5.95$), reflecting the slower development required to master abstract reasoning compared to more concrete cognitive tasks.

In comparison to existing studies, the dramatic gains in questioning validate Neirotti (2021), who posited that formulating meaningful questions actively invests students in the cognitive process, moving them efficiently beyond factual recall. The smaller, yet significant, developmental margin in inferring aligns with the theoretical framework of Kids (2023), confirming that because inferencing requires the integration of textual clues with prior knowledge, it imposes a heavier cognitive load that requires more time to develop. The improvement of the learners dictates clear implications for practice and policy, specifically that instructional pacing must be dynamic. Educators must differentiate their lesson plans, allocating more instructional time, repeated exposure, and structured scaffolding (such as graphic organizers and think-aloud modeling) specifically for complex, abstract skills like inferencing, rather than treating all metacognitive strategies with equal instructional weight.

4.4. Significant Differences Between and Among the Metacognitive Reading Strategies (Table 4)

The Analysis of Variance (ANOVA) established significant statistical differences in the efficacy among the various metacognitive reading strategies ($F = 4.007$, $p = 0.001$). The data proves that questioning strategy (mean = 95.70) is the most effective while inferring (mean = 81.20) is least effective. These differences suggest that while using multiple strategies is

generally effective, students learn and apply each specific reading strategy at different rates depending on the cognitive effort it demands.

In comparison to existing studies, the statistical superiority of the questioning strategy corroborates the UNC-Chapel Hill Learning Center (2024) assertion that active inquiry acts as the primary catalyst for maximizing engagement and memory retention. The comparative statistical lag of the inferring strategy substantiates Wilkinson (2023), who notes that regulating abstract reading behaviors and interpreting unstated information requires advanced cognitive maturity and a deeper synthesis of prior schemas.

These differences provide clear implications for practice and policy, as curriculum designers and policymakers must recognize that metacognitive strategies are not homogenous in their difficulty. Teacher training programs should emphasize differentiated instructional techniques, preparing educators to rapidly accelerate students through foundational metacognitive tasks while providing sustained frameworks for the mastery of inferential reasoning. Considering study limitations, a brief implementation period naturally favors metacognitive strategies that yield rapid, observable improvements, while potentially disadvantaging higher-order processes like inferring that require prolonged, iterative practice to reflect statistical parity.

5. Conclusion

The study demonstrates that integrating metacognitive strategies significantly enhances the reading comprehension and critical thinking skills of Grade 5 pupils. While learners initially possessed foundational proficiencies in generating questions and monitoring comprehension, the intervention yielded substantial overall improvements. The "Questioning" strategy emerged as the most highly effective approach, empowering students to actively synthesize texts and extract key information. Conversely, the "Inferring" strategy showed the least improvement, indicating that drawing logical conclusions and interpreting unstated meanings remains complex cognitive tasks requiring extended practice. Ultimately, the varying effectiveness among the strategies underscores the necessity of tailoring metacognitive instruction, particularly the combination of high-yield strategies and essay assessments to specific learning objectives and student needs.

It is then recommended that educators may incorporate metacognitive reading strategies and essay-based evaluations into their standard instructional practices. Teachers may also design targeted, differentiated activities such as guided think-alouds, contextual clue analysis, and outcome prediction specifically aimed at scaffolding and strengthening students' inferential reasoning skills. Furthermore, instruction should empower learners to independently apply these strategies, enabling them to self-monitor, question, and summarize autonomously outside of guided practice. School administrators should prioritize resource allocation by securing funding for instructional materials and continuous professional development, ensuring teachers are fully supported in delivering effective metacognitive reading programs.

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