

Boosting Reading Comprehension Performance: The Impact of Metacognitive Reading Strategies on Grade 11 Students

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ABSTRACT

This study investigates the impact of metacognitive reading strategies on enhancing the reading comprehension of Grade 11 HUMSS students in the Reading and Writing Skills subject at i-Link College of Science and Technology in SY 2023-2024. Using an explanatory sequential research design over four weeks, strategies such as SQ3R, inferring and predicting, visualizing, and summarizing were applied. Pretest and posttest scores were analyzed, revealing significant improvement ($p=0.00$) with a large effect size ($d=0.82$). Focus Group Discussion highlighted seven themes, including confidence, engagement, and self-efficacy. A joint display confirmed alignment between quantitative and qualitative findings, indicating that metacognitive strategies effectively boost reading comprehension and academic performance, offering a promising approach for pedagogical enhancement.

INTRODUCTION

In today's rapidly evolving society, students must not only gather information but also communicate and comprehend it effectively. As much of academic knowledge is delivered through text, students require strong reading skills to manage the demands of school and succeed academically. Reading, as Flavell (1979, cited in Ramandhanti & Yanda, 2021) describes, is an intricate cognitive activity that involves multiple complex processes. This complexity can often hinder students, particularly those unskilled in navigating the difficulty levels of their reading materials. Challenges with reading comprehension have even been identified as factors impacting Filipino students' performance on assessments like the National Achievement Test (NAT), as noted by Dr. Yolanda Quijano, head of the Department of Education's Bureau of Elementary Education (The Philippine Star, 2011).

Developing reading comprehension proficiency is vital, as it allows learners to maximize their knowledge acquisition and influences their academic performance. According to Gonzales-Intal (1996, cited in Padilla & Tupe, 2011) and Sibayan (1985, in Padilla & Tupe, 2011), many Filipino high school students struggle to manage the difficulty level of reading materials appropriate for their grade. Allado (2006) elaborates on reading as a communicative process between a reader and writer, where the reader uses skills, knowledge, world understanding, interest, and attitudes to interpret meaning from text.

Further, Atkins and Williams (2009) highlight the effectiveness of metacognitive reading strategies, which allow students to monitor and control cognitive processes. Mokhtari and Reichard (2002) describe strategies like SQ3R, predicting, visualizing, and summarizing as tools for active engagement and comprehension. However, comprehension strategy instruction often receives limited attention in classrooms, as Scharlach (2008) notes teachers face challenges in both planning and applying these methods. Hilden and Pressley (2007, cited in Scharlach, 2008) emphasize that designing comprehension strategy instruction is complex, requiring time and resources.

Furthermore, i-Link College of Science and Technology faces similar challenges, with teachers observing that many students struggle with reading comprehension and higher-order thinking skills. Classroom practices often emphasize comprehension questions rather than explicit strategy instruction, possibly due to limited teacher familiarity with these techniques. This study aims to address these gaps by integrating metacognitive reading strategies into reading instruction to strengthen students' comprehension skills.

This research assesses the impact of metacognitive reading strategies on the reading comprehension of Grade 11 HUMSS students. It specifically examines the change in pretest and posttest scores after implementing these strategies, the significance and effect size of these changes, and how these strategies foster comprehension improvement. Additionally, the study investigates the alignment between quantitative and qualitative findings, presenting a joint display of both data types. Through this study, we aim to enrich educational practice by demonstrating the potential benefits of

metacognitive strategies in creating more effective and strategic readers among senior high school students.

LITERATURE REVIEW

Metacognitive Theory

Metacognitive Theory emphasizes the awareness and regulation of one's cognitive processes, which are critical for effective reading comprehension, encompassing three main components: planning, monitoring, and evaluating. Planning involves setting goals and strategies before engaging with a text, allowing students to approach reading with a clear purpose. Moreover, monitoring refers to the ongoing assessment of comprehension during reading, enabling students to recognize when they do not understand something and adjust their strategies accordingly, and evaluating focuses on reflecting on the reading process after completion, helping students assess the effectiveness of their strategies and understanding. Research indicates that students who actively engage in metacognitive practices tend to achieve better comprehension outcomes, as they can identify their understanding levels and strategize effectively to enhance learning (Baker & Brown, 1984; O'Malley & Chamot, 1990).

The integration of Metacognitive Theory into this study is evident in the application of various metacognitive reading strategies, such as SQ3R, inferring and predicting, visualizing, and summarizing, which were employed to enhance the reading comprehension of Grade 11 HUMSS students. Thus, this study effectively integrates Metacognitive Theory by demonstrating that teaching these strategies can empower students to take control of their learning processes, leading to improved reading comprehension outcomes.

Cognitive Load Theory

The Cognitive Load Theory (Sweller, 1988) posits that learning is optimized when cognitive demands are managed effectively, particularly in complex tasks such as reading, distinguishing between three types of cognitive load: intrinsic load, which is related to the inherent complexity of the material being read; extraneous load, which is influenced by how information is presented and can hinder comprehension if not organized properly; and germane load, which involves the mental resources dedicated to processing and understanding information. To enhance comprehension, it is crucial to reduce extraneous load through well-organized information and the application of metacognitive strategies, which allow learners to manage cognitive demands better, leading to improved reading engagement and understanding.

In this study, metacognitive reading strategies serve to reduce extraneous cognitive load by providing students with structured approaches to engage with texts. For instance, strategies such as summarizing, predicting, and self-questioning help students organize their thoughts and focus on key concepts, thereby minimizing distractions that can lead to cognitive overload. Research indicates that when students are taught to apply these metacognitive strategies, they become more adept at monitoring their understanding and adjusting their reading approaches accordingly (Soto et al., 2019).

Innovation, Intervention, and Strategy

Reading, as a thinking activity, requires a reader to use metacognitive knowledge and employ conscious and deliberate strategies (Karbalaei, 2011). These strategies are termed as metacognitive strategies which are conscious procedures by which students monitor their own reading processes including evaluating the effectiveness of cognitive strategies being used.

These metacognitive strategies are further classified by Iwai (2011) into three groups namely, planning (pre-reading), monitoring (during reading), and evaluating (post-reading) strategies. Planning strategies include establishing a purpose for reading, activating learners' prior knowledge, previewing the text, and identifying the text structure. Monitoring strategies, which are used during reading, involve self-questioning or reflecting, contextualizing meanings, discriminating ideas, summarizing, and inferring. Evaluating strategies, on the other hand, include thinking about how to integrate what one has read into other situations and identifying oneself with the author, the narrative, or with a character in the text read.

Some highly useful comprehension strategies have been identified from studies on good readers. These strategies range from the simple to the complex. However, Keene (2008 in Othman, Mahamud&Jaidi, 2014) notes that readers need not use many strategies to understand a particular text. A suitable strategy or two is enough to have a positive effect on the comprehension performance of students. From the array of strategies examined by the Texas Educational Agency (2002), the following strategies are especially helpful and lend themselves particularly well to instruction.

Several metacognitive reading strategies are taught to and used by students to help them better understand what they read. Some common ones are the Survey, Question, Read, Recite, Review (SQ3R), activating and using background knowledge, generating and asking questions, making inferences, predicting, visualizing, using graphic organizers, comprehension monitoring, and summarizing.

In this action research, the researcher utilized metacognitive reading strategies to improve students' reading comprehension performance. The metacognitive reading strategies used by the researcher involve fun, exciting, and challenging activities to improve and support learning. The teacher used direct instruction and metacognitive reading strategies such as SQ3R strategy, inferring and predicting, visualizing and using graphic organizers, and summarizing were employed.

The following are the metacognitive reading strategies used by the researcher to improve the reading comprehension performance of Grade 11 HUMSS students in Reading and Writing Skills subject:

1. Inferencing is a strategy that requires readers to evaluate or draw conclusions from information in a text. It has been shown that when readers are taught how to make inferences, they improve their abilities to construct meaning. Indeed, research indicates that the ability to make inferences is crucial to successful reading.

2. Predicting is also considered a very useful strategy in reading. This strategy involves the ability of readers to get meaning from a text by making informed predictions. Good readers use predicting as a way to connect their existing knowledge to new information from a text to get meaning from what they read. Before reading, they may use what they know about an author to predict what a text will be about. The title of a text may trigger memories of texts with similar content, allowing them to predict the content of the new text.
3. Another useful reading strategy is visualizing. This involves the ability of readers to make mental images of a text as a way to understand processes or events they encounter during reading. This ability can be an indication that a reader understands a text. Some research suggests that readers who visualize as they read are better able to recall what they have read than those who do not visualize.
4. Another important reading strategy is summarizing. This strategy involves the ability of readers to pull together or synthesize information in a text so as to explain in their own words what the text is about. Summarizing is an important strategy because it can enable readers to recall text quickly. It also can make readers more aware of text organization, of what is important in a text and of how ideas are related.
5. The use of graphic organizers is also considered to be helpful in making readers better understand a text. According to Adler (2001), graphic organizers can help readers focus on concepts and how they are related to other concepts. Graphic organizers help students read and understand textbooks and picture books. They provide students with tools they can use to examine and show relationships in a text and help students write well-organized summaries of a text.
6. The SQ3R method is also known as a helpful strategy in reading. SQ3R stands for survey, question, read, recite, and review. It is an effective active reading strategy to better understand a written text. It is also a great way to empower students who struggle to concentrate on a text. Additionally, it facilitates the retention of what has been read since the reader reviews the content several times in multiple ways. Students majoring in the humanities and arts, physical and biological sciences, psychology, and other social sciences can benefit greatly from the SQ3R strategy. However, students studying math typically do not benefit by using this method. Regardless of whether students read scholarly articles and periodicals, textbooks, or published research, SQ3R can be utilized to enhance comprehension. Likewise, the SQ3R strategy is simple to utilize. SQ3R is a great method to use when struggling with memory retention and boredom.

The researcher will use metacognitive reading strategies to improve the reading comprehension performance of the Grade 11HUMSS students. Each activity had a time frame and assessment that served as monitoring of students' progress. The assessments, instructional activities, and quizzes are quality-

assured and validated by the Curriculum Coordinator of SHS, one English Teacher, and the School’s Research Coordinator.

Before the implementation of the intervention, the teacher prepared all the necessary materials and the pretest to be administered. As to the implementation of the intervention, in the 1st week, the teacher administered the pretest, and after that the presentation of learning competencies. Thus, the implementation of metacognitive reading strategies such as SQ3R strategy and at the end of the week a short quiz is administered as part of monitoring the conduct of the metacognitive strategies. Moreover, to emphasize the concepts the teacher gives feedback and lets other students reiterate the idea or concept. In addition, rubrics are used to determine the accuracy and precision of the answer.

In the second week, inferring, visualizing, and graphic organizers are implemented as an intervention, and at the end of the week, a short quiz is administered. Predicting, visualizing, and summarizing are used as an intervention and also the teacher will administer a quiz to check on their progress in class. Last week, visualizing and graphic organizers were implemented and at the end of the week, a posttest was administered to check how students’ conceptual understanding progressed.

After the 4 weeks of implementation of the intervention, the teacher-researcher conducted a Focus Group Discussion (FGD) with the students to ask inquiries and feedback on the used intervention and what probable suggestions they have to make the intervention excellent. Thus, data are all gathered and analyzed.

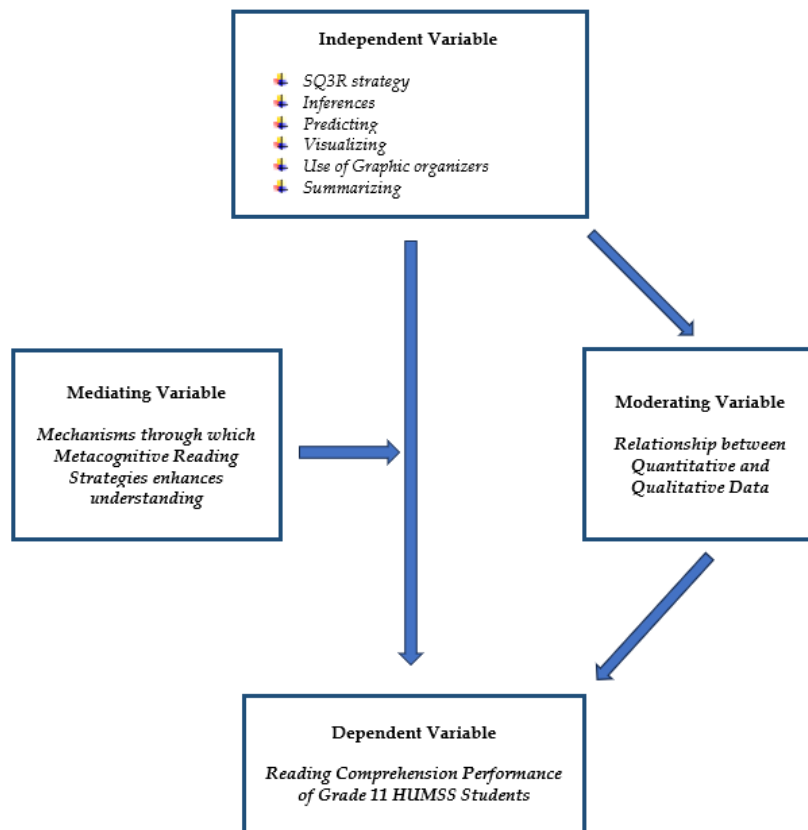


Figure 1. Conceptual Framework

METHODOLOGY

This study employed an explanatory sequential research design, a mixed-methods approach that involves two phases: initially collecting and analyzing quantitative data, followed by qualitative data collection and analysis. The research took place at i-Link College of Science and Technology, involving 61 Grade 11 HUMSS students, specifically 34 from Aguinardo and 27 from Bonifacio, who participated in the Reading and Writing Skills subjects.

Prior to the intervention, the researcher created a 30-item multiple-choice reading comprehension test aligned with the Most Essential Learning Competencies (MELCs). This test underwent face and content validation by the school's curriculum coordinator, research coordinator, and an English teacher to ensure its reliability. The pretest was administered before the four-week intervention, which focused on teaching and applying metacognitive strategies. After the treatment, the same test was given as a posttest. Additionally, a Focus Group Discussion (FGD) was conducted, using a questionnaire with open-ended questions related to the metacognitive strategies employed, while ensuring participant confidentiality.

Ethical considerations were paramount in this study, prioritizing respect, beneficence, and justice. The researcher obtained approval from the school principal and informed teachers about the intervention. Participants were assured of the confidentiality of their information, and the absence of significant risks was clearly communicated. Their participation was voluntary, and they were treated fairly throughout the process.

For data analysis, the researcher calculated the mean percentage scores for pretest and posttest assessments. A t-test for correlated samples was utilized to determine significant differences between the two sets of scores, while Cohen's *d* was applied to assess effect size. The Focus Group Discussion data were analyzed using Creswell's (2007) Thematic Analysis techniques. A joint display, accompanied by a narrative explanation, was provided to illustrate how metacognitive reading strategies improved students' reading comprehension performance.

RESULT AND DISCUSSION

Table 1. Pretest and Posttest Mean Scores of 11 HUMSS Students in Reading and Writing Skills Subject

Groups	SD	Weighted Mean	Verbal Description
Pretest	4.38	21.74	Good
Posttest	3.78	25.07	Very Good
Range of Means		Description	
24-30		VERY GOOD	
17-23		GOOD	
10-16		AVERAGE	
9 below		POOR	

Table 1 shows the mean percentage scores of Grade 11 students based on the 30-item pretest and posttest in the Reading and Writing Skills subject. Results

revealed that Grade 11 students had higher weighted means in the posttest than in the pretest. The mean of students in the pre-test is placed at 21.73, which means that generally, the students have a good level of reading comprehension in Reading and Writing Skills, while the post-test result revealed that the weighted mean is 25.52 which means that Grade 11 students got a Very Good level of reading comprehension performance after the implementation of metacognitive reading strategies.

The findings Aziz and Usman (2017) suggested that incorporating metacognitive strategies into reading instruction can be highly beneficial for students. Teachers can enhance reading programs by explicitly teaching these strategies, which not only improve comprehension scores but also foster independent learning skills.

Table 2. Paired T-Test of Significance Between Pre-Test and Post-Test Scores of Grades 11 HUMSS Students in Reading and Writing Skills Subject

Groups	SD	Mean	p-value	Description
Pretest	4.38	21.74	0.00***	Very Highly Significant
Posttest	3.78	25.07		

As shown in Table 2, the pretest and posttest of the group were compared to find out if there were significant differences between the means and the gain scores. The result shows that after using metacognitive reading strategies there is a significant relationship ($p= 0.00***$) to each other. The above findings stressed that the results have significant differences. This explains that metacognitive reading strategies have improved the reading comprehension performance of Grade 11 HUMSS students.

The result runs parallel to the study of Rahimi and Abednia, (2016) as they investigated the effectiveness of metacognitive strategies on the reading comprehension abilities of English as a Foreign Language (EFL) learners. The results indicated a significant improvement in reading comprehension scores among students who employed metacognitive strategies compared to those who did not, highlighting the positive relationship between these strategies and enhanced reading performance.

Table 3. Effect Size of Metacognitive Reading Strategies on Grade 11 HUMSS Students' Reading Comprehension Performance

Groups	SD	Mean	Effect size	Description
Pretest	4.38	21.74	$d= 0.82$	Large
Posttest	3.78	25.07		

Cohen's effect size	Interpretation
0.80- higher	Large
0.50	Medium
0.20	Small
0.19- below	Trivial

As shown in Table 3, the pretest and posttest of Grade 11 students were compared to find out if the effect size using metacognitive reading strategies is small, medium, or large. The result shows that after using metacognitive reading strategies there is a large scale ($d=0.82$) to each other. The above findings stressed that the results have a large-scale effect size. This explains that using metacognitive reading strategies has improved the reading comprehension performance of Grade 11HUMSS students.

The study of Soto, et.al. (2019) concluded that students who utilized metacognitive strategies were better able to monitor their understanding of texts and adjust their reading strategies accordingly. The findings emphasized the importance of metacognitive knowledge in enhancing reading comprehension, particularly through the regulatory processes of evaluation and self-reflection. This aligns with your results, indicating a significant relationship between metacognitive strategies and improved comprehension performance.

Table 4. Essential Themes and Core Ideas of Participants' Positive Experiences in Metacognitive Reading Strategies

Significant Statements	Code	Frequency	Formulated Meanings	Theme Cluster
<p>"The reading strategies really help us, Sir. Although it's challenging, it's interactive, and we can easily remember the topics and lessons because of the activities.</p> <p>I sometimes use a variety of strategies to improve my learning or comprehension, but graphic organizers, it helps me create a visual representation of what will happen in the story.</p> <p>By reflecting on the lessons learned and how I understand them, I feel like I've grown more now. I've improved a lot compared to before.</p> <p>I find the lessons easier now. Actually,</p>	Athena, Zeus, Apollo, Artemis	4	<p>Comprehension enhancement in this context means improving one's ability to understand and retain information while reading. It checks if you understand, looks up confusing parts, and connects new information to what you already know. It's like learning how to read more smartly so you can understand things better and remember them more easily."</p>	Comprehension Enhancement

<p><i>I use graphic organizers every time I work on my essays, concept papers, and even research."</i></p>	<p>Artemis, Aphrodite, Hermes</p>	<p>3</p>	<p>Confidence encourages readers to persist in challenging passages, seek clarification when needed, and reflect on their understanding afterward, all of which contribute to improved comprehension skills over time. Self-efficacy can reduce anxiety about reading tasks, allowing readers to approach texts with a positive mindset and greater openness to learning.</p>	<p>Confidence and Self-efficacy</p>
<p><i>I can now connect the materials by making predictions or even relating them to my own experiences and interests.</i></p>				
<p><i>I used to struggle a lot with reading and understanding the meaning of the text, but with the help of these strategies, my learning and understanding have improved."</i></p>				
<p><i>In every activity you presented, Sir, it was both enjoyable and challenging. The way you engage and explain things to us is truly unique; everyone participates in the lesson, with no exceptions.</i></p>	<p>Ares, Aphrodite, Hermes, Dionysus, Poseidon</p>	<p>5</p>	<p>Using metacognitive reading strategies to enhance engagement and interest can lead to deeper comprehension and a greater appreciation for the content being read.</p>	<p>Engagement and Interest</p>
<p><i>Your activities are not only entertaining but also intellectually stimulating.</i></p>				
<p><i>Additionally, the strategies you use greatly assist in helping us</i></p>				

<p><i>understand the lessons more easily. Although most of Sir's activities are conducted in groups, my knowledge in reading has significantly strengthened as a leader.</i></p>	<p>Hera, Hermes, Apollo</p>	<p>3</p>	<p>Independence in reading with metacognitive reading strategies means becoming more self-reliant and empowered in one's ability to understand and learn from texts. This independence allows readers to tackle new material with confidence, adapt their approach to different texts, and ultimately become more proficient and autonomous readers.</p>	<p>Independence in Reading</p>
<p><i>In Sir's quizzes, I am now able to answer the context presented to me within a short period.</i></p>				
<p><i>I no longer feel afraid when responding to his questions or addressing inquiries, as I have created summaries and graphic organizers to aid my understanding.</i></p>				
<p><i>At times, while visualizing or inferring, we also contemplate what the best ending for the story might be.</i></p>				
<p><i>Yes, that has a significant impact on us since it makes it easier to understand the lessons.</i></p>	<p>Ares, Poseidon, Hera, Artemis</p>	<p>4</p>	<p>Overcoming challenges with metacognitive reading strategies involves using thoughtful approaches to navigate difficulties encountered while reading. Individuals can develop resilience and adaptability in the face of reading difficulties,</p>	<p>Overcoming Challenges</p>
<p><i>Even when the context we read is difficult, if the activity is engaging and the metacognitive reading strategies are effective, along with excellent teaching, the lessons become enjoyable and easier to master. The concepts are simple for us to understand, and I can</i></p>				

<p><i>quickly catch up with the lessons through your games, Sir.</i></p>		3	<p>leading to improved comprehension and learning outcomes.</p>	<p>Awareness of Choices of Strategies</p>
<p><i>I always feel excited when a new literary text is presented and I'm tasked with summarizing it. It gives me the sense that I have the freedom to choose my own strategies to understand the text effectively. You also provide points while we answer, which is encouraging.</i></p>	<p>Zeus, Hermes, Athena</p>		<p>This awareness fosters flexibility and adaptability, allowing readers to refine their strategy selection based on the specific demands of the material and their learning preferences, ultimately leading to more effective comprehension and retention of information.</p>	
<p><i>I am motivated to read every night to prepare for the exam and respond accurately.</i></p>				
<p><i>Students are engaged with the lesson because it makes the material very understandable, and we have the freedom to choose strategies that help us comprehend and retain the lessons, depending on the approaches provided by Sir Ralph.</i></p>				
<p><i>Actually, the lessons and reading strategies used by Sir Ralph are very effective. They are truly easy to understand. For instance, when he provides an academic text or literary piece, we can easily identify the main ideas and comprehend the entire story because it is presented in an understandable way. I</i></p>	<p>Athena, Hermes, Poseidon, Artemis, Apollo, Dionysus</p>	6	<p>Improving academic performance through metacognitive reading strategies involves leveraging thoughtful approaches to reading to enhance understanding, retention, and</p>	<p>Improvement in Academic Performance</p>

believe this has improved my knowledge of English, for sure.

Sir's strategies are brilliant and enhance our learning.

One thing I admire about Sir Ralph's vision for education is how he simplifies the lessons.

critical thinking skills. This leads to deeper engagement with the material, better retention of key concepts, and improved ability to analyze and synthesize information.

Based on the answers of students in the Focus Group Discussions after the post-test conducted. The data was analyzed using Thematic Analysis and showed 7 essential themes, which are comprehension enhancement, confidence and self-efficacy, engagement and interest, independence in reading, overcoming challenges, awareness of choices of strategies, and improvement in academic performance. The metacognitive reading strategies used by the teacher helped improve the reading comprehension performance of students with the help of the teacher as the facilitator of the class and the intervention implemented.

Table 5. The Joint Display Between Quantitative and Qualitative Data of the Study

Quantitative Data	Qualitative Data	Joint Display	Implication
The effect size of 0.82 denotes a "Large Effect"	Comprehension Enhancement	Similar ideas	This implies that the use of metacognitive reading strategies is very effective in enhancing the of Grade 11HUMSS students' reading comprehension performance.
The p-value (0.00***) signifies "Very Highly Significant"	Improvement in Academic Performance	Similar ideas	This implies that Grade 11HUMSS students' reading comprehension progressed by analyzing the data of pre-test and post-test.

Metacognitive reading strategies are very effective in enhancing the reading comprehension of students based on qualitative and quantitative data. The quantitative result showed that the effect size (0.82) denotes a large effect thus the qualitative data has a similar idea to the comprehension enhancement. This implies that using metacognitive reading strategies is very effective in

enhancing the conceptual understanding of Grade 11HUMSS students in Reading and Writing Skills subject.

Furthermore, the p-value (0.00***) signifies “Very Highly Significant” has a similar idea with the improvement in reading comprehension which revealed this implies that Grade 11HUMSS students’ reading comprehension performance progressed by analyzing the data of pre-test and post-test.

Teaching strategies with the help of metacognitive reading strategies if intertwined together really bring the best out of students. Overall, the use of metacognitive reading strategies really helped, facilitated, and enhanced Grade 11HUMSS students’ reading comprehension in Reading and Writing Skills subject.

CONCLUSIONS AND RECOMMENDATIONS

The implementation of metacognitive reading strategies has significantly enhanced the reading comprehension performance of Grade 11 HUMSS students in the Reading and Writing Skills subject. The data indicate a marked improvement, with students showing higher mean scores in post-assessments compared to pre-assessments, supported by both quantitative results and qualitative feedback from participants. This study demonstrates that when students are equipped with metacognitive tools, they become more effective learners, fostering greater comprehension, confidence, and independence in their reading abilities.

It is strongly recommended that metacognitive reading strategies be integrated across various educational sectors and subject areas. This approach can empower educators to facilitate deeper learning experiences and improve student outcomes. Future implementations should consider incorporating a variety of activities that cater to different intelligence levels, as identified by Gardner's Multiple Intelligences theory. This ensures inclusivity and enables students to engage with materials in ways that align with their strengths.

Educators, curriculum designers, and educational researchers should collaborate to refine and expand metacognitive reading strategies continually. Developing comprehensive guides with practical insights and resources will support educators in effectively implementing these strategies. Moreover, Teachers should strive to create a classroom atmosphere that promotes friendship, care, and respect. A supportive environment will enhance the effectiveness of teaching strategies and foster student engagement. Lastly, Teachers should actively seek and incorporate student feedback into their teaching practices. Understanding students' perspectives can lead to more effective instructional strategies and improvements in learning outcomes.

ADVANCED RESEARCH

Future research should explore the application of metacognitive reading strategies in diverse educational contexts within the Philippines, considering the unique cultural and linguistic backgrounds of Filipino learners. Investigating the effectiveness of these strategies in different subject areas, such as Mathematics and Science, could provide insights into their broader applicability. Additionally, longitudinal studies that track the long-term impacts of metacognitive strategies

on students' academic performance and self-efficacy across various grade levels would be beneficial. Research focusing on the training and professional development of teachers in implementing these strategies effectively can also contribute to improved educational outcomes.

Moreover, comparative studies examining the effectiveness of metacognitive reading strategies among different demographic groups, including rural versus urban students, could further enhance our understanding of how to tailor educational interventions to meet diverse learners' needs.

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