Meta-Cognitive Notetaking Strategy: Its Influence on the Performance of the Upper Primary Students in Reading

Richelle D. Paca-anas

Buenavista Elementary School, Basey II District, Samar Division

Abstract

The study delved into the influence of metacognitive note-taking strategy on the performance of the learners in reading. This focused on the application of the approach in reading instruction so as to develop the learners' reading comprehension skills. The duration of the study is limited to two quarters of the school year 2022-2023. This involved 22 fourth-grade students in Buenavista Elementary School, Basey II District of Samar Division. The pre-experimental design, utilizing a single group pretest-posttest method was employed in this investigation. The instrument used was a 30-item achievement test in English covering the most essential competencies (MELCs) based on the curriculum adopted in public elementary schools. This was administered to the learners to determine whether there is an improvement in the participants' reading performance via pretest and posttest scores and gains. The data were treated via mean, percentage and t-test of significant difference. The results revealed moderate to high improvement in the learners' reading performance, demonstrated by the significant difference in the pretest and posttest scores as well as in the gain scores. This implies that the metacognitive note-taking strategy positively impacted the learners' performance in reading. The use of the method in classroom instruction, not only in reading, but also in other fields of discipline is recommended.

Key words: metacognitive strategy, note-taking, reading performance

1. INTRODUCTION

Across the world, schools prioritize the development of reading skills for learners, as reading is fundamental for finding, understanding, expressing, and sharing information. It should be developed at a young age, as it functions as gateway to learning almost everything (Keyser, 2021). Reading skills are also important for academic success, as they allow children to access and grasp the curriculum, improve communication and language skills, and open doors to new worlds. Reading is fundamental at all levels of the educational system, as all subjects involve reading, leading to better academic performance (Cimmiyotti, 2013). Therefore, developing reading skills among children is vital in the teaching-learning process, for it serves as the foundation of learning.

School systems face the challenge of producing readers, who must be able to read and comprehend. Teachers have a significant responsibility to nurture and develop students' reading skills, from decoding to understanding and applying the takeaways. To address poor reading performance, the Department of Education launched programs like the "Every Child a Reader Program (ECARP)" in 2001 and DepEd Order No.45, series of 2005. This mandates that every child must be a reader by the beginning of school year 2002-2003 and every child that should be promoted to the next level should have mastered basic reading literacy skills. Teachers are expected to identify and initiate appropriate interventions and instructional materials to address the needs of

learners with reading difficulties (Caliwag, 2014). Teachers have been working to identify and practice strategies, approaches, and techniques in teaching reading to support and assist learners with reading problems.

Reading is a crucial aspect of basic education, and schools are investing significant effort in teaching students to read, as it is a subject included in high-stakes standardized tests (Acdedios,2015).

The Philippines is facing a significant reading literacy issue, with the country ranking lowest in reading comprehension among 79 countries in the 2018 Program for International Student Assessment (PISA) (San Juan, 2019). Additionally, fifth-grade students in the Philippines are falling behind their counterparts in Southeast Asian countries in reading, writing, and mathematics. The Southeast Asia Primary Learning Metrics (SEA-PLM) 2019 study, conducted by the Southeast Asian Ministers of Education Organization and UNICEF, revealed that most Grade 5 students in the Philippines had a reading proficiency level equivalent to that in the first years of primary school (Balinbin, 2020). The results suggest a need for intensified practices to improve reading comprehension skills among learners.

The Department of Education has been focusing on improving students' reading literacy through various initiatives, including research through the Research O'clock forum, action research, and multi-grade classroom teaching. These interventions include using localized contexts to enhance the reading skills of first-grade learners, using reading modules with frustration reading levels, and utilizing localized materials in information and communication technology-based reading interventions (Malipot, 2020). These initiatives have been implemented in schools as mandated by DepEd through DepEd Order No.43 which accentuates the contextualization of the curriculum and localization of learning materials across learning areas (Bee, 2014).

However, despite the many interventions that the public schools have adopted, the problem on low reading level among students still remains. The schools within the division have also implemented different programs and projects initiated and directed by the education sector, yet, reading proficiency reports still bear a number of learners under frustration level. For instance, in Buenavista Elementary School, the teachers face the challenge to improve the poor reading comprehension skills of the learners in some classes. The pretest result in reading of the fourth-grade class, which is identified through Philippine Informal Reading Inventory (Phil-IRI), revealed that around 27% percent of the learners belongs to the frustration level. Taking into account the goal of the educational sector, that is, to produce functionally literate learners, this matter has to be addressed although the percentage of the frustrated readers in the school is not too high. Thus, there is a need to adopt strategies that will help the learners improve their reading comprehension skills.

The influx of technology has led to the use of various teaching strategies, including multimedia, which has led to improved learning outcomes. Learners are exposed to viewing materials, printed modules, and other tools that maximize the availability of technological products. Apparently, the traditional methods are gradually faced out. Despite the benefits of technology in education, poor performance among learners comes as ceaseless pressing issue and is often due to reading difficulties and poor comprehension skills of the students.

Contemplating on this, the researcher considers using metacognitive notetaking as a technique to improve retention and comprehension levels. This strategy involves teaching students to be more active while reading in order to monitor their understanding (Carroll & Ganus, 2012). This present study aims to identify the impact of this technique on the reading performance of the learners.

1.1. Theoretical Framework

Theories serve as a springboard of any studies. These provide an explanation and meaning of the research. Thus, this study considers a few theories to support its context. First, this takes into account the reading comprehension theories namely Proposition Theory and Schema Theory. The proposition theory argues that the reader constructs main and broad ideas as they process the text. These ideas are then prioritized so that the ones that the reader believes are most important are given the highest priority to be committed to memory (Ngabut, 2015). On the other hand, Schema Theory is primarily based on the context of schema, which is known as the existing knowledge that a person has about the people, places, things, and events around them. Schema theory purports that meaning is made when connections are made between the text and the reader's existing knowledge (Shen, 20008).

The mentioned reading comprehension theories suggest that significant ideas are stored in memory during text processing. Readers must establish connections between real settings and the text to find meaning. Note-taking can help readers remember important details and jot down important information, enhancing their understanding of the text. From this point, these theories have a significant bearing on this recent study.

This paper acknowledges the Metacognitive Theory, a knowledge theory that focuses on how humans can actively monitor and regulate their thought processes. Metacognition, a concept created by John Flavell in the 1970s, encompasses all processes involved in regulating our thinking, such as planning, tracking progress, and assessing our knowledge (Drew, 2022). In this study, metacognition is applied to students' critical thinking, where they write down and delineate important ideas from reading texts and evaluate their learning by specifying what they learned and what they still need to know.

This study also acknowledged the generative theory, which suggests that note-taking is a cognitively active process that promotes memory preservation through cognitive restructuring. It employs two retention mechanisms in cognitive psychology, which are the levels of processing theory and the self-reference effect (Schoen, 2012). The levels of processing theory suggest that deeper levels of processing enable more complex encoding and retention by forming associations between new information and past knowledge (Roediger, Gallo, & Garcia, 2002). In addition, information is better remembered when it is associated with one's self during encoding (Burns, 2006). The generative nature of note-taking that results from active retention strategies allows the learners to deeply encode information. Hence this is proposed to enhance retention through increased organizational processing.

Notetaking is a useful technique for improving reading comprehension. It allows readers to process text by identifying important parts, which helps in enhancing their understanding. Thus, this study aims to investigate how note-taking can aid in improving the learners' reading performance. The note-taking process was done in a meta-cognitive format, rather than the usual note-taking that transpired in class. By focusing on this aspect, learners are expected to enhance their reading skills and improve their overall reading experience.

1.2 Conceptual Framework

Bhasin (2022) emphasized that the conceptual framework of the study describes the expected relationship between variables, indicating what will be discovered through the investigation. It specifies relevant variables and their connections, as well as the flow and interconnection of these variables. In connection to this, the figure below illustrates the road map of the study.
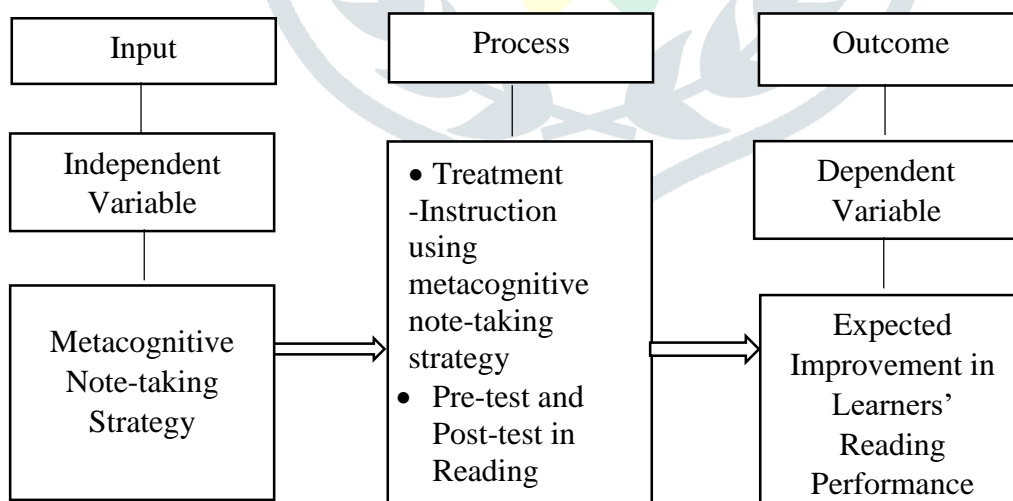
Figure 1

Paradigm of the Study Concept

The figure shows the adoption of IPO flow or research. Canonizado (2021) explained that the IPO model of research represents the summary of various related articles that explains the processes involved. The

input is the introduction of the metacognitive note-taking strategy in teaching, which served as the independent variable. The process includes the use intervention in instruction given to the 4th-grade students as well as the pre-test and post-test in reading that determines the influence of the independent variable on the dependent variable (learners' performance in reading). With the intervention, the expected outcome is the improved performance of the learners in reading.

1.3. Research Questions

This study investigated the influence of metacognitive note-taking strategy on the performance in reading of the fourth-grade learners in Buenavista Elementary School, Basey II District, Samar Division.

Specifically, this sought answers to the following questions:
1. What are the mean pretest and posttest scores of the learners before and after the application of metacognitive note-taking strategy in reading instruction?
2. Is there a significant difference in the mean test scores of the fourth-grade learners?
3. Is there a notable improvement in the performance of the pupils from the pretest to posttest?
4. What is the implication of the results of the study on teaching reading?

1.4. Hypotheses

Jansen (2020) reiterated that a research hypothesis is a statement about the expected outcome of a study. This identifies the variables being assessed in the study and provides and functions as a guide in the investigation process. Thus, it is also imperative to specify the hypothesis in this study as follows.

H_1 There is a significant difference between the mean pre-test and post test scores of the fourth-grade students in reading comprehension.

H_2 There is an improvement in the reading level of the Grade 4 students after the application of the meta-cognitive notetaking approach in teaching reading.

1.5. Significance of the Study

This study addresses the issue of the poor reading performance of the learners by implementing a meta-cognitive notetaking approach, in the expectation of improving the learners' reading proficiency level. Since this is a common and primary issue in many schools within the division, the results will be significant for various stakeholders. First, the administrators can use the findings to encourage teachers to innovate and adopt strategies like meta-cognitive notetaking to meet the learning needs of the learners. Second, the results offer insights to the teachers relative to the effectiveness of metacognitive note-taking approach, which they can use to assist struggling readers and can potentially apply the approach to other groups of learners. Third, the students, who are the primary beneficiaries, can benefit and utilize meta-cognitive notetaking to enhance their reading comprehension skills. Lastly, future researchers, especially educators, can use the findings of this study as a foundation for further investigation.

1.6 Scope and Limitation

This study investigated the influence of the meta-cognitive notetaking approach on the performance of fourth-grade learners in Buenavista Elementary School, Basey II District, Samar Division. This delved into the effect of the meta-cognitive notetaking approach on the reading performance of the upper primary learners. It involved a single experimental group of fourth-grade class with learners exhibiting poor performance in reading. The study was conducted within the two quarters of the school year 2022-2023, during which pretests and posttests were administered to assess the changes in reading comprehension levels and their overall performance. The intervention involved regular implementation of a meta-cognitive note-taking strategy in reading instructions. Data were collected through reading achievement tests and observational notes.

The limitation of the study is primarily on the design. This used a one-group pretest-posttest design with no control group for comparison purposes. This may influence the internal validity of the findings. Second, the duration of the study is only for two quarters or 22 weeks of the academic year. This may be insufficient to delve into the long-term effects of the intervention. Furthermore, the study is conducted in a single setting, which might make the findings less applicable in other situations. Also, the results of the study may be impacted by other factors such as teacher implementation, student participation, and external influences on reading performance, and relying solely on standardized assessments may miss important reading comprehension and skill development components.

2. REVIEW OF RELATED LITERATURE AND STUDIES

This section aims to contextualize the study within the existing knowledge and literature on the topic to establish the relevance of the gap addressed by the recent investigation. It explored related literature and studies that provide a framework for this recent endeavor.

The Importance of Reading

Johnson (2017) defines reading as the ability to interpret written symbols and understand printed material through continuous experiences. The National Reading Panel, initiated by the US Congress and the National Institute of Child Health and Human Development, has identified five essential elements of reading instruction: phonemic awareness, phonics, vocabulary, comprehension, and fluency, which learners must master to improve their reading performance.

Reading and comprehension are crucial skills for students to understand how society works and survive the challenge of getting information, usually presented through text. Research shows that reading aids mental development and can lead to frustration in learning when skills are insufficient. Key aspects of reading include recognizing what is being read, interpreting ideas, injecting meaning into printed words, applying different thought processes, and integrating words and paragraphs. Reading is a complex process that cannot be isolated if the aim is to help learners find fulfillment in their reading endeavors (Suson et al., 2020).

Palani (2012) believes that reading is a crucial skill for thinking, evaluating, judging, imagining, reasoning, and problem-solving. It allows individuals to build or fix things, experience stories, find trust, and boost their ideas or beliefs. Thus, reading provides essential information for daily survival and growth (Issa et al., 2012).

It is from these points that the researcher aimed to address the issue on the low reading performance level of the fourth-grade learners in Buenavista Elementary School. Looking into the significance of reading in education and students' academic achievement, there must be a continuous search for innovation to mitigate the problem of reading performance. Hence, this study was conducted.

Significance of Reading Comprehension

Reading and understanding texts are crucial in primary education as they significantly impact learning in areas like total communication, mathematics, and sciences. This development impacts personal and social development. Students must develop decoding abilities and understand written messages to acquire knowledge and achieve learning (Cunha & Capellini, 2016).

The importance of understanding the character of effective reading instruction within the primary grades cannot be overstated (Ankrum, Genest, & Morewood, 2017). Reading and comprehension are very essential skills in education, as they impact the overall personality of the reader and lead to lifelong learning. It is necessary for the learners to build deciphering capacity and become competent and skilled readers. Reading comprehension is a complex process that involves various cognitive and linguistic aspects, making it a highly important skill in the reading process (Cunha & Capellini, 2016).

Teachers can choose various teaching methods, but what is most effective remains a concern. Understanding theories which explain the nature of learning to read could be used as the basis for improving

the techniques of teaching reading to learners (Suson et al., 2020). In this study, the researcher explores the significance of meta-cognitive notetaking in teaching reading to improve students' performance. It highlights the need for additional interventions to help the "frustration" readers improve their reading comprehension level.

Meta-cognitive Notetaking

Meta-cognitive notetaking is a strategy that encourages self-monitoring while reading, which allows the learners to reflect on their reading by asking questions, making connections, and finding meaning. This strategy encourages active reading and creating own notes using a specific format that enables the students to thoroughly process the text they read (Carroll & Ganus, 2012). It was further explained that this approach can make the time in taking notes more effective because it is based on how a student learns. In this process, the learners are required to write a short summary of what they've read and heir reflections after they have taken down notes about what were presented to them. The reflection part helps the learner review and associate with how he experienced what happened that will make it easier to remember. This column in the meta-cognitive notetaking format acts as a key and index aiding recall. The part that allows the reader to summarize the important details found in the reading text and what he wants to remember will also facilitate retention. All these keep the reading endeavor active and metacognitive. The approach therefore is a helpful way to let the readers understand and find meaning in what they read.

This study focuses on the use of meta-cognitive notetaking as an intervention to enhance the reading performance of the fourth-grade at Buenavista Elementary School. Despite the usual application of standard notetaking techniques in instruction, this approach is yet to be implemented in the school setting, specifically in the upper elementary level. Also, very few studies have tackled this intervention. Hence, this recent study aims to determine its effectiveness in improving reading skills among the upper primary students.

Related Studies

This study is anchored on the concepts of few similar researchers that have significant bearing on the topic, specifically relating to notetaking, reading and meta cognitive notetaking.

The study of Parvane et al. (2013) revealed that over 99% of university students take notes from lectures, and 94% consider note-taking an essential aspect of the educational experience. Researchers have found that note-taking is widely accepted by instructors and teachers as a valuable tool for increasing retention (Haghverdi, 2010).

Other researches show that taking and reviewing class notes positively impacts student learning, with studies confirming that students recall more lecture material if they record it in their notes (Bligh, 2000).

Cirera (2017) highlighted in her study the benefits of note-taking in English learning which accentuates its role in comprehension, efficiency, and development of listening skills. Students can use this technique to create narrative, expository, and informational writings, thereby enhance their performance in English. The meta-cognitive note-taking technique helps learners enhance their cognitive skills while learning, ultimately improving their English performance.

This study also considers the results of other scholarly work that investigated the significance of reading. The studies by Nyarko et al. (2018) and Palani (2012) show a positive relationship between reading proficiency and academic performance. They also highlight that effective learning reflects the students' reading skills. Constant reading not only improves vocabulary but also enhances comprehension of concepts, which is vital for understanding and for the overall school performance.

A recent study by Sari (2017) underscores that reading is very important not only in English classes but also in other subjects like mathematics, as it enhances our knowledge of the material we have learned.

Suson et al (2020) also explained further in their study that experts claimed that both academic processes, particularly reading comprehension, share cognitive processes, such as predicting outcomes and sequencing events. They also pointed out that reading skills are important for both comprehension and academic achievement. Their study revealed that differentiated instruction boost the reading ability of the students.

In connection to the significance of reading and reading comprehension in the educational setting, it is imperative that teachers should identify appropriate technique to address the concerns relative to poor reading performance of the learners. This study aims to address the gap in addressing reading problems in schools by focusing on the impact of note taking and meta-cognitive notetaking on fourth-grade students' reading performance. The research emphasizes the importance of note taking and meta-cognitive notetaking in improving learners' learning habits. This also has for its purpose to enhance reading comprehension skills and improve reading performance through the application of metacognitive note-taking strategy in reading instructions.

3. METHODOLOGY

This section provides the details of the process and procedure of the study. This presents the research design, setting, respondents and sampling procedure, instrument and data gathering procedure, instrument validity and reliability, and statistical treatment.

3.1. Design

This study used a pre-experimental design, specifically a one-group pretest-posttest approach to evaluate the effectiveness of the metacognitive note-taking strategy on the reading performance of the upper primary learners. Only one group of students, which is the fourth-grade class of Buenavista Elementary school, was tested before and after the intervention to determine any changes in their reading skills. DeCarlo (2021) explained that researchers conduct pre-experimental designs to assess the effectiveness of their interventions on a small group, aiming to establish evidence for or against the intervention. In this study, the researcher focused on identifying the impact of the metacognitive note-taking approach in giving reading instruction on the performance of a single group of learners.

3.2. Setting

This study was conducted at Buenavista Elementary School, Basey II District of Samar Division. The school has a total of 110 students and 22 of them are in fourth-grade class that the researcher handled.

Buenavista Elementary School (BES) is located in Barangay Buenavista, Basey Western Samar. The school is known for its diverse student population coming from different walks of life. It has a typical learning environment where classrooms are equipped with basic instructional materials and technological tools. However, teachers also tend to provide or secure other needed technological tools and materials in order to meet the learning demands of the students. Similar to other public elementary schools in the division and region, the poor reading performance of some learners is one of the challenges that BES faces. Hence, teachers are also committed to innovate so as to continuously ensure a support system for the learners.

3.3. Participants and Sampling Procedure

The respondents of the study refer to the people who are involved in the investigation process while sampling method is the technique through which few people from a wide population are selected as participants in research. In this study the respondents are referred to as the participants in the experimental process.

3.3.1. Participants

The study involved the fourth-grade class of Buenavista Elementary School who are enrolled in school year 2022-2023. There are 22 students in this class. Their recent reading level status bears that 6 of them belong to the frustration level; 9 are in the instructional level; 7 are independent readers. This data imply that there is a need to adopt an intervention in order to help the learners who are in the frustration and instructional level. This is why the researcher considered the utilization of metacognitive note-taking approach in teaching reading in anticipation of its positive impact on the reading performance of the learners.

3.3.2. Sampling and Procedure

This recent study will use the purposive sampling. This is a non-probability sampling technique where the researcher has the discretion to choose the variables for the sample population based on his knowledge of the context. The selection of the sample is based on their characteristics and objective of the study (Crossman, 2020).

In this study, the participants are already known to the researcher as group of learners who can help meet the goal of determining the effectiveness of the intervention, which is relative to addressing their reading difficulties. All of the students that belong to the fourth- grade class will be used as sample.

3.4. Instrument

Basically, this study used a 30-item achievement test prepared by the researcher. The questions are aligned with the most essential learning competencies (MELCs) in English for fourth-grade learners as directed by the Department of Education (Lego, 2014).

The MELCs covered for the first 2 quarters within the scope of reading skills development are recognizing the parts of a simple paragraph, noting significant details of various text types, identifying the structure, purpose and language features of different text types, using context clues to find meaning of unfamiliar words, and identifying different meanings of content specific words.

The researcher also used observation notes to record the important learning episodes that are influenced by the intervention.

Also, this study used the meta-cognitive notetaking format that requires the participants to write down what they processed. (Lippman, 2012) is illustrated below.

Figure 2
Meta-cognitive Notetaking Format

3.5. Data Gathering Procedure

Prior to the conduct of the study, the researcher sought needed consent from the different concerned offices. Afterwards, the pretest was administered. Both the parents and the learners were informed about the conduct of experimental study. During the 1st and 2nd quarter of school year 2022-2023, the fourth-grade students were taught with the application of the meta-cognitive notetaking technique in their reading or English classes. After the 2nd quarter, the posttest was conducted using similar reading comprehension test. This was done to determine whether there is an improvement in the reading performance of the learners and to assess whether there is a significant difference in the mean scores. The result of the post-test was compared to the pre-test data. Then these were analyzed to identify whether the hypothesis is rejected or accepted.

During the experimental procedure, the participants were assisted by the teacher in completing the notetaking form, which were checked to ensure that the learners did it right. The participants were encouraged to read these notes at home. Within the research duration the teacher-researcher regularly conducted follow-up activities relative to the reading activities given to the learners.

In addition, although this study is basically experimental in nature, which means the results and findings shall rely on the outcome of the experimentation process, the researcher also recorded significant situations or phenomena that are noteworthy along the conduct of the study. This are additional input that were used to describe the implication of the metacognitive note-taking approach on the reading performance of fourth-grade learners. These observations were also used as basis in drawing the conclusion and recommendation in this study.

3.6. Validity

In order to ensure that the instrument measures what is intended to measure, the sample of the achievement test was forwarded to master teachers and other research experts within the district for evaluation and modifications. Likewise, the metacognitive note-taking format was sent to master teachers and school head in the district for checking and necessary adjustments to make sure that this fits the level of the learners and will produce the needed result.

3.7. Reliability

After the evaluation of the instrument, the questionnaire was reproduced for a dry run in order to determine whether this yields a consistent and reliable results.

Also, the meta-cognitive notetaking format was given first to 10 students in another school within the district at the same grade level. They were aided in completing the notetaking form to see if this will obtain the information that are consistent to what is required.

3.8. Statistical Treatment

This study aims to determine the influence of the meta-cognitive notetaking approach on the reading performance of the fourth graders. The experimental process focused on identifying if there is an improvement in the learners' reading performance after the treatment, based on the pretest and posttest results. Hence, to meet this purpose, the frequency and percentage computations were used. The formula for percentage is,

$$P = (f/n) \times 100$$

where:

P= percentage

f= frequency

n= number of cases or total sample

The number and percentage of the students who belong to the specific reading level before and after the experimentation will be tabulated and interpreted.

To analyze the pre-test and post-test scores, the formula for **mean** was used.

The raw and mean scores of the students were determined in order to have a working description of the learners' performance level. Each correct answer of the learner in the test is given 1 point. Then, the score ranges, ratings and adjectival interpretations were adapted as shown below.

Raw Score	Transmuted Score	Interpretation
26-30	95 – 100	Excellent
21-25	90 – 94	very good
16-20	85 – 89	Good
11-15	80 -84	Fair
6-10	75-79	Poor
1-5	70 – 74	very poor

Also, **t-test** was utilized to assess whether there is a significant difference between the pretest and posttest mean scores. The study employed 0.05 level of significance of a two-tailed test which means that if it is reached, the researcher customarily rejects the hypothesis and concludes that a real difference does exist.

4. RESULTS AND DISCUSSION

This section presents the results of the experimentation that highlights the pretest and posttest mean scores of the learners from which the acceptance or rejection of the hypotheses is determined.

Pretest - Posttest Performance of the Participants

During the conduct of the study, a 30-item reading comprehension pretest was administered to the group to determine the entry performance at the beginning of the study. Similar type of test was also given after the exposure of the respondents to metacognitive note-taking strategy. Both results of the test were tabulated in the table that follows. This shows responses to problems 1 and 2 of this study.

Table 1

Pretest - Posttest Performance of the Participants

Raw Scores	Pretest		Posttest		t-value	p-value
	F	%	F	%		
26-30			1	4.55%		
21-25			6	27.27%	-10.78553	< .00001
16-20	1	4.55%	11	50%		
11-15	3	13.63%	4	18.18%		
6 - 10	17	77.27%				
1 - 5	1	4.55%				
Total	22	100%	22	100%		
X	8.55[a]		18.59[a]			
Sd	2.906		3.261			

* with letters   *Means unlike differ*

significantly

α = 0.05

The table shows that during the pretest, 17 pupils (77.27%) got a score within the range of 6–10, which is below the 15 passing score that can be interpreted as 'fair' performance. The majority of the pupils at the onset of the study had poor reading comprehension. This clearly shows that most students had difficulty

understanding what they were reading. From the result, there are 3 pupils (13.64%) who demonstrated a fair reading comprehension level. While there is 1 pupil (4.54%) who demonstrates a good reading comprehension skill, there is 1 pupil (4.54%) identified with a very poor reading comprehension level as evinced by the score between 1-5.

Additionally, the table presents the posttest results of the study. As reflected, 11 pupils or 50% of the pupils were at a good reading comprehension level. As reflected too, there are 6 pupils who have a very good reading comprehension level, as there are 4 pupils identified as having a fair reading comprehension level. In the result, there is one pupil(4.54%) performed excellently.

To identify the significant difference of the pupils' result in pretest and posttest, the researcher used t-test analysis on 0.05 level of significance. With a computed t-value of -10.78553 with a p-value of less than 0.0000, the result showed significant difference between the pretest and posttest scores. This indicates that there was a significant difference of the students' reading comprehension level before and after the exposure instructions using the meta-cognitive note taking strategy, thus accepting the hypotheses emphasizing that there is a variation in the pretest and posttest mean scores.

The findings of the study are supported by the argument of Carroll & Ganus (2012) that meta-cognitive notetaking promotes active reading and self-monitoring, and allows students to process and remember information more efficiently. This is demonstrated by the observed increase in pupils' reading comprehension level as revealed by the posttest results. The improvement significantly implies that the metacognitive notetaking method was effective.

Also, the substantial difference in the pretest and posttest mean scores implies a notable improvement of the reading comprehension skills of the learners after the experimentation or treatment. The result aligns to the contention of Parvane et al. (2013) and Haghverdi (2010), specifying that note-taking is a substantial aspect of the educational process that essentially influences learning outcomes and increases retention, leading to an improved learners' performance.

Improvement of Pupils' Reading Comprehension Level

The following table shows the gain scores computed from the pretest and posttest scores to determine the improvement level of the pupils in reading comprehension. This corresponds to problem 3 of this study.

Table 2

Pupils' Reading Comprehension Improvement Level

Gain Scores	F	%	Interpretation
16-above			
12-15	7	31.82%	High Increase
8-11	12	54.54%	Average Increase
4-7	3	13.64%	Low Increase
3-below			
Total	22	100%	
Mean	10.04		Average Increase
SD	2.256		

As previously cited, there is a significant difference in the mean pretest and posttest scores based on the computed t-value. Thus, the increase in scores from the pretest to the posttest indicates an improvement in the pupil's reading comprehension. In general, the reading comprehension improvement of the pupils is identified as an "average increase," as shown by the mean gain of 10.04. This suggests that there is a moderate improvement in their reading comprehension due to the application of the intervention.

The low standard deviation suggests consistent student responses to the intervention, as the gain scores are clustered around the mean.

Further, it is revealed from the result that seven (31.82%) pupils had shown a high increase in their scores from pretest to posttest. This indicates that nearly one-third of the students showed a considerable improvement in their reading comprehension after the intervention.

Also, the twelve (54.54%) pupils had exhibited an average increase, which means over half of students had an average increase in reading comprehension scores, indicating moderate benefits from the meta-cognitive notetaking strategy.

On the other hand, three (13.64%) pupils had displayed a low increase in reading comprehension indicative of a smaller percentage of students who experienced a minimal improvement in their reading comprehension scores.

The results show that the meta-cognitive notetaking strategy significantly improved reading comprehension among upper primary learners, with moderate to high gains, confirming the hypothesis which highlights the potential of metacognitive note-taking strategy to significantly enhance reading performance.

Palani (2012) emphasized the importance of reading in fostering critical thinking, evaluation, and problem-solving abilities, which are all necessary for academic achievement. This is supported by the gains that the learners had in reading comprehension assessment, which shows their better understanding of the lessons. Furthermore, Nyarko et al. (2018) underscored a positive interrelation between reading competence and overall academic achievement. This supports the idea that improved reading abilities achieved through the application of metacognitive note-taking approach leads to better learning outcomes. Finally, Cirera (2017), through her study, accentuated the importance of metacognitive note-taking taking method in reinforcing understanding and learning efficiency among students. This was vouched by the considerable increases in reading performance of the learners in this study after the intervention.

Implication of Results on Teaching Reading

The findings and results of the study laid several implications for teaching reading. The ideas that emerged, which includes results from the observations of the researcher, can be grouped into the following:

1. **Effectiveness of metacognitive note-taking strategy**

Meta-cognitive notetaking has improved the reading comprehension scores of the learners in the upper primary learners, interpreted as moderate to high increases. This study implies that using metacognitive notetaking in teaching reading aids in enhancing the learners' reading comprehension level.

2. **Fostering active engagement**

Carroll and Ganus (2012) argued that meta-cognitive notetaking strategies promote active reading and self-monitoring, which enhances the learners' information processing and retention. This suggests that teaching strategies that encourage active engagement and self-reflection can enhance reading comprehension and should be adopted.

3. **Responding to the diverse needs of learners**

The study reveals that while most students earned an average to high increases in reading comprehension, there is also a lower percentage that earned low scores. This is suggestive of the need for differentiated instruction and additional support for students struggling with this strategy. Hence, teachers should provide supplementary interventions.

4. **Promoting the importance of reading comprehension**

Reading comprehension is essential in teaching that requires concept analysis and mental processes as argued by Johnson (2017) and Suson et al. (2020). This implies that educational institutions must prioritize the development of reading comprehension skills of the learners..

5. **Informed teaching practices**

The data suggest the use of metacognitive notetaking approach in reading instruction. Administrators and instructors can utilize these results to push the implementation of such practices in their schools, so as to attain a widespread improvement in reading comprehension across diverse student demographics.

6. Encouraging continuous professional development

The positive results of this study suggest that ongoing professional growth for teachers can be enhanced by training opportunities relative to the implementation of metacognitive note-taking approach as well as the adoption of creative reading methods.

5. CONCLUSION

After analyzing the data, results, and finding, the following conclusions are drawn:

1. The meta-cognitive notetaking strategy enhanced the reading comprehension skills of upper primary learners.
2. The increase in scores, that is from moderate to high, of the majority of the learners reveal the effectiveness of the metacognitive note-taking strategy in teaching reading.
3. The study indicates that meta-cognitive notetaking strategy encourages active engagement, self-monitoring and reflection, thereby enhances the learners' reading comprehension skills
4. The strength of the strategy and its potential to address diverse learning needs in the classroom are shown by the consistent student responses and alignment with educational theories.
5. The study emphasizes the importance of incorporating innovative instructional methods like meta-cognitive notetaking to enhance reading instruction and improve student outcomes.

6. RECOMMENDATION

Based on the conclusion, the integration or utilization of meta cognitive note-taking approach in teaching reading is highly recommended. This can also be utilized with other classes and in other fields of discipline.

Also, the teachers should undergo training on the proper implementation of the approach to ensure that the teaching-learning process addresses the needs of the students. It can also be suggested that teacher should prepare supplementary materials in order to effectively apply of the approach, thereby ensure an optimum level of learners' progress in reading.

Further study on the use of metacognitive note-taking approach in teaching other fields of discipline is recommended in order to determine its efficacy in other fields.

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