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Cognitive and Metacognitive Learning Strategies and Its Relationship with the Academic Performance of the Grade Six Pupils in Sirawai Central School, Sirawai District, Schools Division of Zamboanga Del Norte

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ABSTRACT: This study aimed to determine the cognitive and metacognitive learning strategies and their relationship with the academic performance of the grade six pupils in Sirawai Central School, Sirawai District, Schools Division of Zamboanga del Norte, during the School Year 2025-2026. It utilized survey and descriptive-correlational research methods. There were two hundred eighteen (218) grade six pupils who served as respondents. Weighted mean, standard deviation, and Spearman Rank-Order Correlation Coefficient (Spearman rho) were the statistical tools used with JAMOVI as the statistical software. The perceived level of cognitive and metacognitive learning strategies was high. Rehearsal obtained the highest average weighted value (3.72), followed by metacognitive self-regulation (3.65), critical thinking (3.64), and elaboration (3.63). The organization obtained the lowest average weighted value (3.39) and is interpreted as average. The level of academic performance was satisfactory (AWV=2.88). Cognitive and metacognitive learning strategies and academic performance were not significantly related. Based on the findings, the author recommends that the Department of Education, Zamboanga del Norte Division would develop and implement division-wide programs that would address the structural barriers to academic achievement, particularly those related to family income, ethnic background, and parental education. This would include expanding access to school feeding programs, learning resource subsidies, and targeted support for Muslim and indigenous learners. School Principals, through the teachers would provide explicit instruction in organization strategies, particularly outlining, diagramming, and structured note-taking, to address the identified weakness in this domain. Integrate these strategies across all subject areas to help pupils systematically structure and synthesize information.

KEYWORDS: cognitive and metacognitive learning strategies, academic Performance, grade six pupils, Sirawai District, Department of Education

INTRODUCTION

Cognitive and metacognitive learning strategies play a crucial role in how learners process, store, and apply information in school. Cognitive strategies include rehearsal, elaboration, and organization, which help pupils remember and understand lessons by repeating key ideas, linking new concepts to prior knowledge, and structuring information effectively (Nabizadeh et al., 2019). Metacognitive strategies involve planning, monitoring, and evaluating one's own learning, enabling students to regulate how they study and solve problems. Research shows that explicit instruction in these strategies leads to long-term academic benefits by helping learners set goals, assess their understanding, and adjust when they encounter difficulties (de Boer et al., 2018). For Grade Six pupils, these strategies support both content mastery and greater independence in managing their own learning.

Academic performance refers to the extent to which learners achieve the expected competencies and learning outcomes as reflected in their grades, test results, and classroom achievement. It is influenced not only by intellectual ability but also by motivation, study habits, learning strategies, self-regulation, and the support learners receive from teachers and parents. Agustiani, Cahyad, and Musa (2016) found that self-efficacy and self-regulated learning were positively related to students' academic achievement, indicating that learners who believe in their abilities and manage their learning effectively tend to perform better in school. Similarly, Lourenço and Paiva (2024) emphasized that self-regulated learning and academic time management are significantly associated with pupils' performance, particularly in language and mathematics. Thus, academic performance serves as an important indicator of learners' mastery of lessons and reflects how effectively they apply cognitive, motivational, and self-regulatory skills in their studies.

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Cognitive and metacognitive learning strategies are essential in modern education because they strengthen student achievement and support lifelong learning. Metacognitive awareness being able to monitor and control one's own thinking can significantly improve learning outcomes when teachers incorporate reflective and strategic instruction (Stanton et al., 2021). Likewise, students who use deeper cognitive techniques such as elaboration and organization, along with metacognitive regulation like monitoring and adjusting strategies, achieve better academic results than those who use surface learning alone (Akpur, 2021). For Grade Six pupils facing more complex academic tasks, these strategies are vital in helping them manage increasing workloads and prepare for secondary education.

Empirical research shows that metacognitive strategies are strongly linked to academic performance in basic education. Alecida (2025) found that Grade Four pupils with higher metacognitive awareness achieved better results when guided in applying these strategies effectively. Similarly, Arianto (2024) reported that primary pupils who regularly used metacognitive and self-regulated learning strategies developed stronger problem-solving skills and self-efficacy, leading to improved academic outcomes. These findings suggest that effective use of cognitive and metacognitive strategies may significantly enhance Grade Six pupils' academic performance, making them important targets for classroom intervention and school programs.

Despite the growing research on cognitive and metacognitive strategies, there is still limited evidence linking these strategies to academic performance in Philippine basic education, particularly in rural schools. Prior studies focused mainly on senior high school students or specific subject areas and skills such as online reading and metacognitive science instruction (Domingo, 2022; Famarin, 2024). However, no published research has examined how cognitive and metacognitive learning strategies relate to the overall academic performance of Grade Six pupils in Sirawai Central School. Considering its unique context marked by limited resources and diverse learner backgrounds there is a need for a localized study to provide school-based insights that can guide future instructional practices and policy decisions.

LITERATURE

Cognitive and metacognitive learning strategies

Cognitive and metacognitive learning strategies have been widely recognized as powerful predictors of student outcomes. In a large synthesis, Hattie and Donoghue (2016) reported that both cognitive strategies (such as rehearsal, organization, and elaboration) and metacognitive strategies (planning, monitoring, evaluation) show substantial positive effects on achievement across subjects and grade levels. Supporting this, Farazandeh et al. (2023) found that training students in cognitive and metacognitive learning strategies significantly improved their academic identity, suggesting that these strategies not only influence performance but also shape learners' engagement and persistence in educational contexts.

Rehearsal

Rehearsal strategies such as repeating or verbally reviewing information are often used by students to memorize foundational material, but recent research suggests their effectiveness may be limited when used alone. For example, Akpur (2021) found that in a model including rehearsal, elaboration, organization and critical thinking, rehearsal did *not* significantly predict academic achievement, while organization and critical thinking did. This suggests that mere repetition without deeper processing may not lead to higher academic performance. Similarly, Kikas (2021) explored primary and middle school students' strategy use and found that students' strong belief in rehearsal as a useful strategy was negatively associated with deeper comprehension and did not contribute meaningfully to improved performance on a word-memorization task. These findings indicate that while rehearsal is a common cognitive strategy, its sole use may not suffice to support academic success, especially when the task demands deeper learning and understanding.

Elaboration

Elaboration, as a cognitive learning strategy, helps students deepen understanding by connecting new information with their prior knowledge and real-life experiences. Endres et al. (2017) showed that university students who were prompted to elaborate on lecture content by generating personal examples during a recall task used more elaborative strategies and achieved higher comprehension scores than those who simply recalled the information, with elaboration mediating the improvement in learning outcomes. Similarly, Ansari, Saleh, Nurhaidah, and Taufiq (2021) found that senior high school students who frequently employed elaboration such as simplifying complex information through models and applying rules to new problems were more successful in solving mathematical higher-order thinking problems, indicating that elaboration is closely linked to better problem-solving performance and conceptual understanding. These findings support the view that elaboration is a powerful strategy for enhancing academic performance, especially when learners are expected to engage in deeper, more complex tasks.

Organization

Organization as a cognitive learning strategy helps students structure information so it is easier to understand, remember, and use. It typically involves clustering related ideas, making outlines, drawing diagrams, and constructing charts to show relationships among concepts. Montero et al. (2017) showed that a university learning-strategies course significantly increased students' reported use of organization (along with elaboration and other strategies), indicating that explicit training can strengthen this skill and support more effective studying. Likewise, Khan (2020), using the Motivated Strategies for Learning Questionnaire among basic medical science students, found a positive and statistically significant correlation between the "organization of information" subscale and academic performance, suggesting that students who more frequently organize their learning materials tend to achieve higher examination scores. Together, these findings highlight organization as a key cognitive strategy that contributes meaningfully to improved academic outcomes.

Critical thinking

Critical thinking is significantly enhanced when students actively engage in metacognitive practices that allow them to plan, monitor, and evaluate their reasoning processes. In the study by Rivas and Saiz (2022), found that embedding metacognitive prompts within a problem-based learning (PBL) framework led to measurable improvements in higher-order critical thinking among university students. Similarly, Pereles (2024) reported that trainee teachers who used a specialized digital tool designed for metacognitive strategy support showed statistically significant

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gains in both substantive and dialogic dimensions of critical thinking in an online learning environment. These findings underscore the idea that critical thinking isn't developed solely through content exposure, but requires learners to regulate their thinking processes suggesting that teaching metacognitive strategies can be a powerful lever for enhancing critical thinking n educational settings.

Metacognitive self-regulation

Metacognitive self-regulation students' ability to plan, monitor, and evaluate their own learning has been consistently linked to better academic outcomes across different contexts. Pucillo and Perez (2023) found that metacognition and self-regulation significantly predicted grade point average among occupational and physical therapy students, showing that learners who more actively regulate their study strategies tend to achieve higher academic performance. Likewise, Baissane and Zaid (2024) reported that metacognitive self-regulation, together with self-efficacy and task value, was a significant predictor of Vietnamese high school learners' English achievement, indicating that students who frequently apply metacognitive strategies such as planning, monitoring comprehension, and adjusting approaches obtain better language grades. These findings suggest that metacognitive self-regulation is a crucial component of self-regulated learning and plays an important role in promoting students' academic success.

Academic performance

In the DepEd policy context, *academic performance* is commonly represented by the learner's grades because DepEd's assessment system records evidence of learning and then reports achievement through grading. DepEd explains that summative assessment measures the extent to which learners have mastered the required competencies and that its results are recorded and used to report the learner's achievement, which is operationalized through computed grades. In the same policy, DepEd defines grading as the process of reporting assessment data by assigning a value to results as a record of students' ability, achievement, or progress, providing a clear basis for using grades as an indicator of academic performance in research (DepEd Order No. 8 S. 2015).

Conceptual Framework

The conceptual framework is illustrated in Figure 1. Part I highlights the independent variable, cognitive and metacognitive learning strategies, which are measured through five indicators, namely: rehearsal, elaboration, organization, critical thinking, and metacognitive self-regulation. This section consists of twenty-nine (29) items designed to determine the respondents' level of cognitive and metacognitive learning strategies. Part II presents the dependent variable, students' academic performance, which is evaluated based on the DepEd grading system.

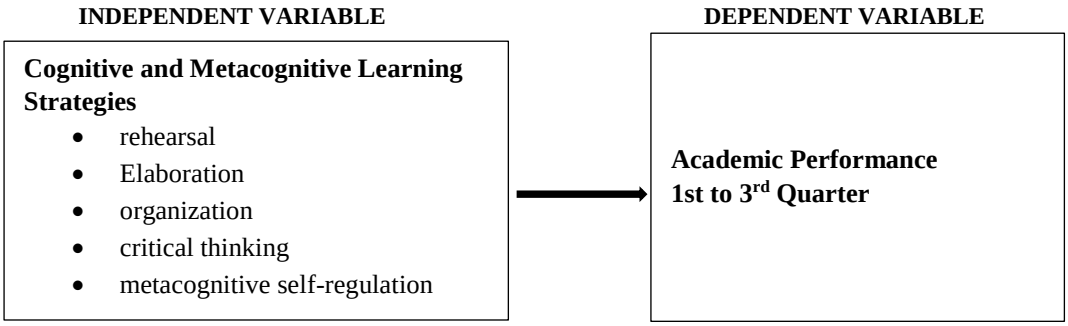


Figure 1. Conceptual Framework of the Study

Statement of the Problem

This study aimed to determine the cognitive and metacognitive learning strategies and their relationship with the academic performance of the grade six pupils in Sirawai Central School, Sirawai District, Schools Division of Zamboanga del Norte during the School Year 2025-2026.

Specifically, it sought to answer the following questions:

1. What is the respondents' perceived level of cognitive and metacognitive learning strategies in terms of:
1.1. rehearsal;
1.2. elaboration;
1.3. organization;
1.4. critical thinking; and
1.5. metacognitive self-regulation?
2. What is the respondents' level of academic performance?
3. Is there a significant relationship in the perceived level of cognitive and metacognitive learning strategies and level of academic performance?

Hypothesis

1. There is no significant relationship in the perceived level of cognitive and metacognitive learning strategies and level of academic performance.

Scope and Limitations of the Study

This study is limited to the cognitive and metacognitive learning strategies and how they affect the students' academic performance among two hundred eighteen (218) grade six pupils in Sirawai Central School, Sirawai District, Schools Division of Zamboanga Del Norte, during the 1st to 3rd quarter of School Year 2025-2026.The study focused on five indicators, such as rehearsal, elaboration, organization, critical thinking, and metacognitive self-regulation, with twenty-nine (29) items related to cognitive and metacognitive learning strategies as the independent variables. Academic performance, the dependent variable, was based on respondents' grades from the school year 2025–2026, as officially provided by the class adviser.

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RESEARCH METHODOLOGY

Method Used

The study utilized survey and descriptive-correlational research methods. The researcher utilized the survey method to collect data on the cognitive and metacognitive learning strategies through a questionnaire. According to Lijuan (2024), "survey research is a data collection method used to obtain subject-related information, also referred to as the questionnaire method. It is often used in conjunction with other research methods such as experimental methods and observational methods. In survey research, researchers collect data on individual sensations, motivations, attitudes, values, experiences, and other aspects using predetermined questions in the form of questionnaires or interviews." Creswell and Guetterman (2019) define correlational research as the systematic investigation of relationships among two or more variables, conducted without any experimental manipulation of those variables. Correlational research is a non-experimental approach in which a researcher quantifies variables and assesses the statistical relationship between the cognitive and metacognitive learning strategies and academic performance, without the influence of extraneous variables.

Research Instrument

The questionnaire used in the study consisted of three parts: Part I: cognitive and metacognitive learning strategies adopted from Pintrich, P. R. (1991), with five indicators, namely: rehearsal, elaboration, organization, critical thinking, and metacognitive self-regulation consisting of twenty nine (29) items, Part II: Pupils Academic Performance is the actual performance of pupils taken from teachers class advisers.

Ethical Consideration

This study secured approval from the Research and Ethics Committee of the Department of Education before the conduct of data gathering. Informed consent was obtained from the institution and the individual respondents prior to their participation. The questionnaire was written in clear and understandable language to ensure voluntary and informed participation. The identities of the respondents were kept anonymous, and all information gathered was treated with strict confidentiality. Only essential research data were retained for academic and future research purposes.

Statistical Treatment of the Data

Presented below are the statistical tools utilized in the treatment and analysis of the data gathered.

Weighted Mean. This is used to quantify the respondents' ratings on the cognitive and metacognitive learning strategies and academic performance.

Scoring Procedure

Cognitive and Metacognitive Learning Strategies

Scale	Range of Values	Description	Interpretation
5	4.21-5.00	Strongly agree	Very High
4	3.41-4.20	Agree	High
3	2.61-3.40	Somewhat Agree	Average
2	1.81-2.60	Disagree	Low
1	1.00-1.80	Strongly Disagree	Very Low

Academic Performance

Scale	Description (DepEd Descriptor)	Grading Scale	Remarks
5	Outstanding	90–100	Passed
4	Very Satisfactory	85–89	Passed
3	Satisfactory	80–84	Passed
2	Fairly Satisfactory	75–79	Passed
1	Did Not Meet Expectations	Below 75	Failed

Standard Deviation. This is used to determine the homogeneity and heterogeneity of the respondents' score, where SD ≤ 3 is homogenous and SD > 3 is heterogeneous Aiken & Susane (2001); Refugio et al. (2019).

Spearman Rank-Order Correlation Coefficient (Spearman rho). This is used to determine the correlation between cognitive and metacognitive learning strategies and academic performance. The following guide in interpreting the correlation value proposed by Cohen et al. (2014) was utilized in this study:

Value	Size	Interpretation
±0.50 to ±1.00	Large	High positive/negative correlation
±0.30 to ±.49	Medium	Moderate positive/negative correlation
±0.10 to ±0.29	Small	Low positive/negative correlation
±0.01 to ±0.09	Negligible	Slight positive/negative correlation
	0.0	**No correlation**

DATA PRESENTATION AND ANALYSIS

The data are presented following the statement of the problems of the current study. The study aimed to answer the following questions:

1. What is the respondents' perceived level of cognitive and metacognitive learning strategies in terms of:

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1.1. rehearsal;
1.2. elaboration;
1.3. organization;
1.4. critical thinking; and
1.5. metacognitive self-regulation?

Table 1: Perceived Level of Cognitive and Metacognitive Learning Strategies in Terms of Rehearsal

A. Rehearsal	AWV	SD	Description	Interpretation
1. When I study for this class, I practice saying the material to myself over and over.	3.46	1.14	Agree	High
2. When studying for this class, I read my class notes and the course readings over and over again.	3.61	1.12	Agree	High
3. I memorize key words to remind me of important concepts in this class.	3.88	0.89	Agree	High
4. I make lists of important terms for this course and memorize the lists.	3.92	0.93	Agree	High
Overall	**3.72**	**0.83**	**Agree**	**High**

AWV=Average Weighted Value, SD=Standard Deviation

Table 1 reflects the perceived level of cognitive and metacognitive learning strategies in terms of rehearsal. The result indicates a consistently high utilization among grade six pupils. With an overall mean of 3.72 (SD=0.83), pupils generally agree that they employ rehearsal strategies in their studies. Among the specific indicators, "I make lists of important terms for this course and memorize the lists" received the highest rating (3.92, SD=0.93), followed closely by "I memorize key words to remind me of important concepts" (3.88, SD=0.89). These findings suggest that pupils predominantly rely on memorization and repetition techniques as their primary learning strategies. The high engagement in rehearsal strategies reflects a surface-level approach to learning where information is processed through rote memorization rather than deeper conceptual understanding. This pattern is consistent with recent Philippine educational research indicating that learners who actively plan, monitor, and reflect on their thinking demonstrate deeper understanding and higher achievement, yet many students remain reliant on basic memorization techniques (Espinosa, 2026). The predominance of rehearsal strategies among grade six pupils may be attributed to the nature of classroom instruction and assessment practices that continue to emphasize memorization of facts and terms. The Matatag Curriculum's decongested approach aims to address this by reducing the number of competencies to allow for deeper mastery, with early evaluation results showing large, statistically significant learning gains in Grade 2 pupils across reading, mathematics, and language subjects (Chi, 2026). However, the transition from surface-level rehearsal to deeper metacognitive strategy use requires deliberate instructional scaffolding. The Department of Education's Academic Recovery and Accessible Learning (ARAL) Program, institutionalized through Republic Act No. 12028, provides tutorial support specifically designed to scaffold struggling learners, with early monitoring results showing approximately 9% improvement in learner performance from beginning-of-school-year to mid-school-year assessments (ABS-CBN News, 2026). For grade six pupils in Sirawai District, the high reliance on rehearsal strategies suggests an opportunity to strengthen metacognitive strategy instruction, teaching pupils not just to memorize, but to plan, monitor, and evaluate their own learning processes. This is particularly critical given national data showing proficiency rates dropping sharply from 30.52% in Grade 3 to just 19.56% by Grade 6 in the 2024 National Achievement Test, confirming that learning gaps begin early and compound over time if foundational skills are not addressed decisively (Hernando-Malipot, 2026). Developing stronger metacognitive awareness alongside existing rehearsal strategies could help pupils transition from simple memorization to more meaningful, self-regulated learning that supports long-term academic success.

Table 2: Perceived Level of Cognitive and Metacognitive Learning Strategies in Terms of Elaboration

B. Elaboration	AWV	SD	Description	Interpretation
1. When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.	3.65	1.09	Agree	High
2. I try to relate ideas in this subject to those in other courses whenever possible.	3.24	1.02	Somewhat Agree	Average
3. When reading for this class, I try to relate the material to what I already know.	3.89	0.94	Agree	High
4. When I study for this course, I write brief summaries of the main ideas from the readings and the concepts from the lectures.	3.47	1.29	Agree	High
5. I try to understand the material in this class by making connections between the readings and the concepts from the lectures.	3.75	0.98	Agree	High

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6. I try to apply ideas from course readings in other class activities such as lecture and discussion.	3.76	1.03	Agree	High
Overall	**3.63**	**0.75**	**Agree**	**High**

AWV=Average Weighted Value, SD=Standard Deviation

Table 2 discloses the perceived level of cognitive and metacognitive learning strategies in terms of elaboration. The data indicate a high overall utilization among respondents, though with notable variation across specific strategies. With an overall mean of 3.63 (SD=0.75), pupils generally agree that they employ elaboration strategies in their studies. Among the specific indicators, "When reading for this class, I try to relate the material to what I already know" received the highest rating (3.89, SD=0.94), demonstrating that pupils actively connect new information to their prior knowledge, a foundational elaboration skill. This was followed by "I try to apply ideas from course readings in other class activities" (3.76, SD=1.03) and "I try to understand the material by making connections between readings and lectures" (3.75, SD=0.98). However, the lowest-rated indicator was "I try to relate ideas in this subject to those in other courses whenever possible" (3.24, SD=1.02), which fall within the "Somewhat Agree" range and received an average interpretation. This suggests that while pupils effectively elaborate within subject contexts, they struggle with interdisciplinary connections, a higher-order elaboration skill that requires more sophisticated cognitive processing. These findings align with the pedagogical shifts embedded in the Matatag Curriculum, which emphasizes moving beyond rote memorization toward deeper, connected learning. The Matatag framework explicitly aims to create bridges between procedural knowledge and analytical thinking, enabling students to develop skills needed for solving complex challenges by making connections across subject areas. The curriculum's focus on foundational skills in early grades is designed to support later development of higher-order thinking, including the ability to integrate knowledge from multiple sources (MATATAG Curriculum, 2026). The relatively lower score on cross-subject connections (3.24) indicates that this remains an area requiring further instructional attention, consistent with national concerns about Filipino students' performance in creative thinking and problem-solving, as highlighted by recent PISA results showing Philippine 15-year-olds ranking among the bottom four in creative thinking (Manila Standard, 2025). The high rating on relating material to prior knowledge (3.89) is encouraging, as this foundational elaboration strategy supports the brain's natural learning processes by anchoring new information in existing cognitive frameworks. This is particularly relevant given the Department of Education's ARAL Program, which provides targeted tutorial support for struggling learners, with early monitoring showing approximately 9% improvement in learner performance from beginning-of-school-year to mid-school-year assessments (ABS-CBN News, 2026). The program's success in Sarangani Province through Catch-up Clubs 2.0 demonstrated that 65% of learners progressed in reading when interventions incorporated supportive learning environments and culturally responsive approaches (Save the Children Philippines, 2026). As Education Secretary Sonny Angara emphasized, meaningful reforms depend on applying evidence consistently to improve learning outcomes, and developing stronger elaboration skills represents a key pathway for helping pupils move from surface-level understanding to deeper, transferable knowledge (Daily Tribune, 2026).

Table 3: Perceived Level of Cognitive and Metacognitive Learning Strategies in Terms of Organization

C. Organization	AWV	SD	Description	Interpretation
1. When I study the readings for this course, I outline the material to help me organize my thoughts.	3.39	1.37	Somewhat Agree	Average
2. When I study for this course, I go through the readings and my class notes and try to find the most important ideas.	3.85	1.03	Agree	High
3. I make simple charts, diagrams, or tables to help me organize course material..	3.42	0.88	Agree	High
4. When I study for this course, I go over my class notes and make an outline of important concepts.	2.92	1.31	Somewhat Agree	Average
Overall	**3.39**	**1.12**	**Somewhat Agree**	**Average**

AWV=Average Weighted Value, SD=Standard Deviation

Table 3 exhibits the perceived level of cognitive and metacognitive learning strategies in terms of organization. The outcome reveals a notable contrast between pupils' ability to identify important ideas and their capacity to systematically structure those ideas. With an overall mean of 3.39 (SD=1.12), organization strategies received an average interpretation, falling below the high ratings observed in rehearsal (3.72) and elaboration (3.63). The highest-rated indicator, "When I study for this course, I go through the readings and my class notes and try to find the most important ideas" (3.85, SD=1.03), demonstrates that pupils possess the foundational skill of discerning key concepts, a critical prerequisite for effective organization. However, the lowest-rated indicator, "When I study for this course, I go over my class notes and make an outline of important concepts" (2.92, SD=1.31), falls within the "Somewhat Agree" range and represents the only indicator across all strategy types thus far to drop below 3.00. This gap between identifying important ideas (3.85) and actually outlining them (2.92) suggests that while pupils recognize what matters, they lack the strategic tools to transform that recognition into structured, organized knowledge representations. Similarly, "When I study the readings for this course, I outline the material to help me organize my thoughts" (3.39, SD=1.37) and "I make simple charts, diagrams, or tables to help me organize course material" (3.42, SD=0.88) both indicate moderate engagement with visual and structural organization techniques. These findings align with recent Philippine research emphasizing the critical role of metacognitive awareness in academic success. A study presented at the 11th International Conference on Teacher Education explored metacognition, self-concept, motivation, and self-efficacy in

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Mathematics, highlighting that metacognitive factors significantly influence students' learning outcomes and that strengthening these skills should be a priority for developing effective teaching strategies (JH Cerilles State College, 2026). The Matatag Curriculum directly addresses this need by explicitly shifting pedagogical focus from procedural knowledge to conceptual understanding and critical thinking. The curriculum framework, grounded in cognitive science, emphasizes developing students' ability to organize and structure information rather than merely memorizing facts, with teachers serving as facilitators who guide learners in active knowledge construction (MATATAG Curriculum, 2026). The curriculum revision process involved a systematic decongestion of learning competencies, reducing them by approximately 70%, to allow for deeper mastery and the development of higher-order thinking skills, including the ability to organize and synthesize information meaningfully (MATATAG Curriculum, 2026). The relatively lower scores on outlining and diagramming strategies among respondents underscore the importance of explicit instruction in organizational techniques. The Department of Education's ARAL Program, institutionalized through Republic Act No. 12028, provides a mechanism for such targeted support. Early monitoring results show approximately 9% improvement in learner performance from beginning-of-school-year to mid-school-year assessments, with structured remediation and focused tutorial sessions driving these gains (ABS-CBN News, 2026; Inquirer.net, 2026).

Table 4: Perceived Level of Cognitive and Metacognitive Learning Strategies in Terms of Critical Thinking

D. Critical Thinking	AWV	SD	Description	Interpretation
1. I often find myself questioning things I hear or read in this course to decide if I find them convincing.	3.48	1.07	Agree	High
2. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.	3.73	0.96	Agree	High
3. I treat the course material as a starting point and try to develop my own ideas about it..	3.44	1.02	Agree	High
4. I try to play around with ideas of my own related to what I am learning in this course.	3.86	1.02	Agree	High
5. Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.	3.70	0.70	Agree	High
Overall	**3.64**	**0.67**	**Agree**	**High**

AWV=Average Weighted Value, SD=Standard Deviation

Table 4 conveys the perceived level of cognitive and metacognitive learning strategies in terms of critical thinking. The result reveals a consistently high engagement among respondents across all indicators. With an overall mean of 3.64 (SD=0.67), pupils generally agree that they employ critical thinking strategies in their studies, placing this domain between elaboration (3.63) and rehearsal (3.72) in terms of perceived usage. Among the specific indicators, "I try to play around with ideas of my own related to what I am learning in this course" received the highest rating (3.86, SD=1.02), demonstrating that pupils actively engage in ideation and creative exploration of course content. This was closely followed by "When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence" (3.73, SD=0.96) and "Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives" (3.70, SD=0.70). The lowest-rated but still high indicator was "I treat the course material as a starting point and try to develop my own ideas about it" (3.44, SD=1.02), suggesting that while pupils generate ideas, they may be somewhat more tentative about moving beyond given material to develop independent perspectives. Notably, the standard deviations across indicators are relatively moderate, indicating reasonable consistency in how pupils perceive their critical thinking engagement. These findings align strongly with the pedagogical shifts embedded in the MATATAG Curriculum, which explicitly prioritizes the development of critical thinking as a foundational pillar of basic education. The curriculum's Mahas (Competent) pillar focuses on building essential 21st-century skills, emphasizing that "the curriculum design emphasizes moving from memorization to analysis and problem-solving". Research in the Philippine context further supports the importance of these findings. Studies on teachers' feedback practices indicate that "interpreting learners' thinking positively influenced engagement, motivation, and help-seeking behavior," suggesting that the critical thinking skills pupils report may be nurtured through responsive classroom interactions (Salinas, 2026). The same research emphasizes that "strengthening timely, supportive, and cognitively meaningful feedback practices" enhances learners' ability to engage in higher-order thinking and promotes greater learning independence.

Table 5: Perceived Level of Cognitive and Metacognitive Learning Strategies in Terms of Metacognitive Self-Reflection

E. Metacognitive Self-Regulation	AWV	SD	Description	Interpretation
1. When reading for this course, I make up questions to help focus my reading.	4.03	0.91	Agree	High
2. When I become confused about something I'm reading for this class, I go back and try to figure it out.	3.79	0.96	Agree	High
3. If course materials are difficult to understand, I change the way I read the material.	3.62	1.05	Agree	High

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4. Before I study new course material thoroughly, I often skim it to see how it is organized.	3.65	1.06	Agree	High
5. I ask myself questions to make sure I understand the material I have been studying in this class.	3.86	0.99	Agree	High
6. I try to change the way I study in order to fit the course requirements and instructor's teaching style.	3.33	1.19	Somewhat Agree	Average
7. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.	3.28	1.02	Somewhat Agree	Average
8. When studying for this course I try to determine which concepts I don't understand well..	3.77	1.32	Agree	High
9. When I study for this class, I set goals for myself in order to direct my activities in each study period.	3.79	1.05	Agree	High
10. If I get confused taking notes in class, I make sure I sort it out afterwards.	3.34	1.22	Somewhat Agree	Average
Overall	**3.65**	**0.77**	**Agree**	**High**

AWV=Average Weighted Value, SD=Standard Deviation

Table 5 manifests the perceived level of cognitive and metacognitive learning strategies in terms of metacognitive self-reflection. The data reveals a high overall engagement among Grade Six pupils, with an overall mean of 3.65 (SD=0.77), yet notable variation exists across specific indicators that illuminates important patterns in how pupils plan, monitor, and regulate their learning. The highest-rated indicator, "When reading for this course, I make up questions to help focus my reading" (4.03, SD=0.91), demonstrates that pupils actively employ questioning strategies to direct their attention and comprehension, a sophisticated metacognitive skill that reflects intentional, purposeful engagement with texts. This was followed by "I ask myself questions to make sure I understand the material I have been studying" (3.86, SD=0.99), "When studying for this class, I set goals for myself to direct my activities in each study period" (3.79, SD=1.05), and "When I become confused about something I'm reading for this class, I go back and try to figure it out" (3.79, SD=0.96). These high ratings indicate that pupils possess strong foundational metacognitive skills related to self-questioning, goal-setting, and comprehension monitoring, capabilities that align with recent Philippine research emphasizing that learners who actively plan, monitor, and reflect on their thinking demonstrate deeper understanding and higher achievement (Espinosa, 2026). A study presented at the 11th International Conference on Teacher Education explored metacognition, self-concept, motivation, and self-efficacy, highlighting that metacognitive factors significantly influence students' learning outcomes and that strengthening these skills should be a priority for developing effective teaching strategies (JH Cerilles State College, 2026). However, three indicators fall within the "Somewhat Agree" range with average interpretations, revealing important gaps in pupils' metacognitive repertoires. The lowest-rated indicator, "I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying" (3.28, SD=1.02), suggests that pupils struggle with pre-reading analysis and intentional learning goal identification; they tend to dive into reading without first establishing clear learning purposes. Similarly, "I try to change the way I study to fit the course requirements and instructor's teaching style" (3.33, SD=1.19) indicates limited adaptive flexibility in response to varying academic demands, while "If I get confused taking notes in class, I make sure I sort it out afterwards" (3.34, SD=1.22) reveals that pupils may not consistently engage in post-class clarification and resolution of confusion. This pattern is consistent with recent Philippine research on secondary students' metacognitive reading strategies, which found that students demonstrate a distinct hierarchical pattern where problem-solving strategies are used most frequently, followed by global strategies, with support strategies used least, indicating that while students can monitor and problem-solve during learning, they underutilize supportive practices that would reinforce deeper comprehension (Bantasan, 2026). The study proposed the Global–Problem-Solving–Support (G–P–S) model as a framework for understanding how different metacognitive strategies interact, emphasizing the need for explicit instruction to strengthen weaker strategy areas (Bantasan, 2026). The findings also resonate with research on metacognitive awareness and cognitive engagement among Senior High School students in the Philippines, which revealed significant relationships between metacognitive awareness of reading strategies and cognitive engagement, with beliefs about language learning serving as a partial mediator (University of Mindanao, 2026). This suggests that students' underlying beliefs about learning influence how effectively they deploy metacognitive strategies, a consideration relevant to understanding why respondents may struggle with adaptive strategy use and post-learning clarification. The lower scores on adapting study approaches to fit course requirements (3.33) and sorting out confusion after class (3.34) may reflect beliefs about learning as a fixed rather than flexible process, or limited awareness that effective learners actively adjust their strategies based on context and systematically resolve uncertainties (University of Mindanao, 2026). Research in the Philippine context further underscores the importance of metacognitive skills for academic success. A study on metacognitive skills and student attitudes towards mathematics found that metacognitive skills significantly enhance academic motivation, which in turn positively influences students' attitudes and beliefs about their capabilities. Students with higher levels of metacognitive awareness and regulation exhibited greater academic motivation and more positive attitudes toward learning (Camacho, 2022).

Table 6: Summary of the Perceived Level of Cognitive and Metacognitive Learning Strategies

Indicators	AWV	SD	Description	Interpretation
A. Rehearsal	3.72	0.83	Agree	High
B. Elaboration	3.63	0.75	Agree	High

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C. Organization	3.39	1.12	Somewhat Agree	Average
D. Critical thinking	3.64	0.67	Agree	High
E. Metacognitive Self-Reflection	3.65	0.77	Agree	High
Overall	**3.61**	**0.96**	**Agree**	**High**

AWV=Average Weighted Value, SD=Standard Deviation

Table 6 summarizes the perceived level of cognitive and metacognitive learning strategies. The data reveal an overall high engagement across most domains, with an overall mean of 3.61 (SD=0.96). Among the five indicators, Rehearsal emerged as the highest-rated strategy (3.72, SD=0.83), followed closely by Metacognitive Self-Reflection (3.65, SD=0.77) and Critical Thinking (3.64, SD=0.67). Elaboration also registered a high interpretation (3.63, SD=0.75). However, the organization obtained the lowest rating (3.39, SD=1.12), falling within the "Somewhat Agree" range and receiving an average interpretation. This pattern indicates that while respondents frequently employ basic memorization techniques and demonstrate metacognitive awareness through self-questioning and monitoring, they struggle with systematically structuring and organizing information through outlines, charts, and diagrams. The relatively higher standard deviation for Organization (1.12) also suggests greater variability in how pupils perceive their organizational strategy use compared to other domains. These findings align with recent Philippine educational research emphasizing that learners who actively plan, monitor, and reflect on their thinking demonstrate deeper understanding and higher achievement. The high rating for Metacognitive Self-Reflection (3.65) is particularly encouraging, as metacognitive skills, including self-questioning, goal-setting, and comprehension monitoring, have been identified as significant predictors of academic success in the Philippine context (Espinosa, 2026). Studies on reading comprehension interventions have similarly demonstrated that strategies fostering metacognitive reflection and schema activation lead to deeper comprehension and improved learning outcomes among Filipino students. The Anticipation Guide Strategy, for example, has been shown to enhance prediction and inference skills by activating prior knowledge and promoting active reading, with statistically significant improvements observed in Philippine secondary classrooms (Omega, 2025). The lower rating for Organization strategies (3.39) suggests a critical area for instructional attention. This finding is particularly relevant given the national emphasis on developing higher-order thinking skills through the Matatag Curriculum and the Department of Education's preparation for the 2025 Programme for International Student Assessment (PISA). Education Secretary Sonny Angara has emphasized that learners must be prepared to become "critical thinkers and problem solvers," with DepEd providing familiarization sessions covering critical thinking, quantitative skills, and computer literacy in advance of the 2025 PISA administration (Sevillano, 2025; BusinessMirror, 2025). The overall high engagement in cognitive and metacognitive strategies among respondents suggests that foundational dispositions for self-regulated learning are developing well. However, the gap between organization strategies and other domains indicates the need for explicit instruction in systematic knowledge structuring techniques. As research in the Philippine context confirms, integrating reflective practices and strategic problem-solving approaches supports the development of effective reasoning skills (Espinosa, 2026). For pupils in Sirawai District, strengthening organization strategies, particularly outlining, diagramming, and structured note-taking, could enhance their ability to synthesize and retain information, complementing their already strong rehearsal and metacognitive reflection capabilities. This balanced development of both surface-level and deep-processing strategies is essential for preparing learners to meet the demands of increasingly complex academic tasks and national assessments.

2. What is the respondents' level of academic performance?

Table 7: Level of Academic Performance of the Respondents

Scale	Range of Values		Description	F	Percent	AWV	Description
1	1.00-1.80	< 75	Did not meet expectations	0	0.00		
2	1.81-2.60	75-79	Fairly Satisfactory	98	44.95		
3	2.61-3.40	80-84	Satisfactory	61	27.98	**2.88**	**Satisfactory**
4	3.41-4.20	85-89	Very Satisfactory	47	21.56		
5	4.21-5.00	90-100	Outstanding	12	5.50		

F=Frequency, AWV=Average Weighted Value

Table 7 illustrates the level of academic performance of the respondents. The data reveals a concerning distribution that mirrors national trends in the Philippine education system. With an overall average weighted value of 2.88 interpreted as "Satisfactory," a majority of the pupils, 98 or 44.95%, fall within the Fairly Satisfactory range (75-79), followed by 61 pupils (27.98%) achieving Satisfactory (80-84), 47 pupils (21.56%) reaching Very Satisfactory (85-89), and only 12 pupils (5.50%) attaining Outstanding performance (90-100). Notably, no pupils fall into the "Did Not Meet Expectations" category. This distribution indicates that while all pupils are meeting minimum standards, the concentration in the Fairly Satisfactory range suggests limited academic excellence, with only about one in four pupils performing at Very Satisfactory or Outstanding levels. This pattern is consistent with recent national data from the Second Congressional Commission on Education (EDCOM), which revealed that Grade 6 proficiency based on the 2024 National Achievement Test stood at only 19.56 percent, meaning approximately only one in five students met expected standards (Manila Standard, 2026). The EDCOM II final report, "Turning Point: A Decade of Necessary Reforms," describes a severe "proficiency collapse" wherein while about 30.5% of Grade 3 learners meet proficiency standards, mastery declines sharply to 19.56% by Grade 6 and plummets to a staggering 0.40% by Grade 12, highlighting how learning gaps begin early and compound over time (Philippine Institute for Development Studies, 2026)

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3. Is there a significant relationship in the perceived level of cognitive and metacognitive learning strategies and level of academic performance?

Table 8: Test of Relationship between the Levels of Cognitive and Metacognitive Learning Strategies and Academic Performance

Variables Correlated	rho-value	p-value	Interpretation
Cognitive and Metacognitive Learning Strategies and Academic Performance	0.004	0.953	Positive Negligible/ Slight Correlation Not Significant

Table 8 articulates the test of the relationship between the levels of cognitive and metacognitive learning strategies and academic performance. Employing the Spearman Rank-Order Correlation Coefficient (Spearman rho), the outcome asserts that a negligible positive correlation (rho=0.004) that was not statistically significant (p=0.953), indicating that pupils' perceived use of these learning strategies has no meaningful association with their actual academic achievement. Thus, the null hypothesis is not rejected. This finding challenges theoretical assumptions that learners who actively plan, monitor, and reflect on their thinking demonstrate deeper understanding and higher achievement (Espinosa, 2026). Several factors may explain this unexpected result. First, while metacognitive skills significantly enhance academic motivation, which positively influences attitudes and beliefs about learning, this mediating effect may not translate directly into measurable performance gains without sustained instructional scaffolding (Camacho, 2022). Second, the discrepancy between perceived strategy use and actual academic outcomes may reflect the "proficiency collapse" documented nationally, where systemic barriers such as mass promotion practices, grade transmutation policies, and significant loss of instructional time undermine the potential benefits of individual learning strategies (EDCOM, 2026). The finding underscores that cognitive and metacognitive strategies function as necessary but insufficient conditions for academic success, requiring supportive structural conditions to translate into improved performance outcomes.

DISCUSSION

The findings indicate that Grade Six pupils generally demonstrated a high level of cognitive and metacognitive learning strategy use, suggesting that they frequently applied techniques such as repetition, connecting new information with prior knowledge, questioning ideas, setting learning goals, and monitoring their understanding. Rehearsal obtained the highest mean, showing that pupils primarily relied on memorization, repetition, and listing important terms, while organization received the lowest rating and was interpreted as average, indicating difficulties in preparing outlines, constructing diagrams, and systematically arranging important concepts. Although the respondents reported high engagement in most learning strategies, their academic performance was only satisfactory, with nearly half of the pupils classified under the fairly satisfactory level. Moreover, the negligible positive correlation between cognitive and metacognitive learning strategies and academic performance was not statistically significant, demonstrating that the pupils' perceived use of these strategies did not directly correspond to higher grades. This result may imply that merely knowing or reporting the use of learning strategies is insufficient unless these strategies are applied accurately, consistently, and appropriately across academic tasks. Academic performance may also be influenced by other factors, including instructional quality, availability of learning materials, parental support, motivation, socioeconomic conditions, prior knowledge, and assessment practices. Therefore, teachers should provide explicit and sustained instruction in deeper learning strategies, particularly outlining, diagramming, note organization, self-evaluation, and strategy adjustment, to help pupils move beyond surface-level memorization toward meaningful understanding and improved academic achievement.

CONCLUSION

The study concludes that Grade Six pupils generally demonstrate a high level of cognitive and metacognitive learning strategies, particularly in rehearsal, metacognitive self-regulation, critical thinking, and elaboration, while organization remains the least developed area. Despite their frequent use of these strategies, the respondents' academic performance was only satisfactory, and no significant relationship was found between learning strategies and academic performance. This indicates that the use of cognitive and metacognitive strategies alone may not be sufficient to improve pupils' grades unless these are applied effectively, consistently, and with adequate instructional guidance. Other factors, such as teaching practices, learning resources, parental support, motivation, socioeconomic conditions, and prior knowledge, may also influence academic achievement. Therefore, greater emphasis should be placed on strengthening pupils' organizational skills and ensuring that learning strategies are explicitly taught, practiced, and integrated across subject areas.

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