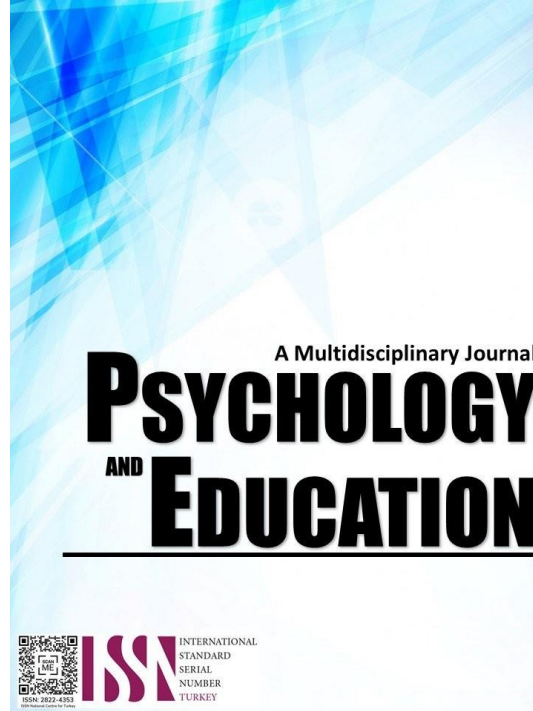


METACOGNITIVE STRATEGIES AND ACADEMIC ACHIEVEMENT IN SOCIAL STUDIES AMONG GRADE 4 PUPILS



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 39

Issue 7

Pages: 982-987

Document ID: 2025PEMJ3806

DOI: 10.70838/pemj.390710

Manuscript Accepted: 04-30-2025

Metacognitive Strategies and Academic Achievement in Social Studies among Grade 4 Pupils

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Abstract

This study aimed to find relationship of pupils' metacognitive strategies and academic achievement in Social Studies among Grade 4 pupils. Specifically, it sought to describe the academic achievement of Grade 4 pupils in Social Studies; determine the level of pupils' metacognitive strategies in learning Social Studies in terms of declarative, procedural, and conditional strategies; and find out the significant relationship between the pupils' academic achievement and their metacognitive strategies in learning Social Studies. A total of 207 pupils were drawn from seven (7) elementary schools in District III in the Division of Valencia City. To gather relevant information needed for the study, the researcher adopted the questionnaire developed by Schraw & Dennison (2004). The questionnaire is a standardized questionnaire, categorized into three areas that assessed pupils' declarative knowledge, procedural knowledge, and conditional knowledge. Student achievement was the reported grade of the pupils as cumulative scores in four (4) grading periods. Descriptive statistics such as frequency, percentage, weighted mean and standard deviation and Pearson product-moment correlation were employed to treat the data. Results indicated that pupils' academic achievement in Social Studies was satisfactory where 80% of them belong to middle grading range. The level of metacognitive awareness in terms of declarative knowledge, procedural knowledge, and conditional knowledge was high. The metacognitive awareness of pupils is not significantly related to their academic achievement. This further indicated that pupils' awareness on their metacognitive strategies has nothing to do with their academic success in Social Studies because pupils had not fully developed their metacognitive strategies yet in learning the subject. It is worth saying that teachers have to introduce activities that would tap pupils' metacognitive awareness, thus, this leads to the attainment of better achievement not only in Social Studies subject, but in all academic areas.

Keywords: *metacognitive strategies, declarative knowledge, procedural knowledge, and conditional knowledge*

Introduction

Teachers today face classrooms filled with learners who possess varying degrees of understanding about how they learn. Some learners are active, self-directed learners who recognize their own learning processes and can apply this knowledge across different learning situations. Others are diligent, average learners who have some awareness of their strengths and weaknesses but may struggle to regulate their learning effectively. Meanwhile, some learners remain passive, with little awareness of how they learn or how to manage their learning. Essentially, classrooms are composed of learners with diverse levels of metacognitive skills.

Metacognition is broadly defined as the ability to monitor and control one's cognitive processes. More specifically, it refers to what individuals know about their thinking processes and how they apply this knowledge to enhance learning and memory (Ormrod, 2004). Researchers further conceptualize metacognitive by dividing it into two key components: metacognitive knowledge and metacognitive regulation — which are believed to be interconnected (Schraw & Dennison, 2004).

Metacognitive regulation, distinct from metacognitive knowledge, refers to the actions individuals take to manage their learning and memory (Schraw & Moshman, 2005). It consists of three main processes: planning, monitoring, and evaluating. Planning involves setting goals, selecting appropriate strategies, and organizing resources to complete a task. Monitoring refers to being aware of one's progress and assessing performance while engaged in the task. Evaluating involves reflecting on the outcome to determine whether the learning objectives were met and whether the strategies used were effective (Schraw & Moshman, 2005).

Through engagement with learners in the school setting, the researcher observed that learners who demonstrate metacognitive skills tend to achieve better results in specific learning tasks. Additionally, it was noted that learners of average intelligence seem to develop certain metacognitive abilities when they are immersed in environments that promote such skills. In contrast, learners with learning difficulties or those who consistently perform poorly do not appear to develop metacognitive strategies spontaneously, unlike their peers without learning challenges.

Given these insights into learners' metacognitive abilities, it is worth exploring whether metacognitive skills are linked to academic performance — particularly in the context of Social Studies classes.

Research Questions

This study aimed to explore the relationship between Grade 4 learners' metacognitive strategies and their academic performance in Social Studies. Specifically, it sought to address the following research questions:

1. What is the academic achievement of Grade 4 learners in Social Studies?
2. What is the level of learners' metacognitive strategies in learning Social Studies in terms of declarative, procedural, and

conditional strategies?

3. Is there a significant relationship between the learners' academic achievement and their metacognitive strategies in learning Social Studies?

Methodology

Research Design

This study utilized a descriptive-correlational research design, which entails the collection and description of data without environmental manipulation. It often involves a singular engagement with designated groups to collect, analyze, categorize, and interpret data. This design seeks to ascertain correlations among variables and generate predictions based on existing knowledge. This research utilized a survey questionnaire to collect data on learners' metacognitive methods and examine their correlation with academic achievement in Social Studies. The gathered data were further characterized, examined, and correlated employing quantitative methodologies.

Respondents

The respondents of this study were Grade 4 learners from Batangan Integrated School, Araneta Elementary School, Vintar Elementary School, Sinabuagan Elementary School, San Isidro Elementary School, Lumbayao Elementary School, and Dalit Elementary School during the School Year 2019-2020. This study utilized simple random sampling to ensure that each Grade IV learner in the district had an equal chance of being selected, making them representative samples of the study. The sampling process involved the aggregated elementary schools in District III. The sample size was determined using Slovin's formula. After the sample has been determined, simple random sampling was used to determine the number of learners.

Instrument

The instrument utilized in this study was the Assessment of Metacognitive Awareness developed by Schraw and Dennison (2004). This standardized questionnaire was divided into three categories: declarative knowledge, procedural knowledge, and conditional knowledge. It consisted of 20 items presented in a Likert scale format, where learners responded to close-ended statements to rate their level of metacognitive awareness in learning Social Studies.

Procedure

The researcher obtained authorization from the Schools Division Superintendent's office and the principals of the selected schools to perform data collection. Upon receiving consent, the researcher directly collaborated with the school authorities to enable student participation in completing the questionnaire. Upon data collection, the completed questionnaires were obtained for coding, documentation, and arrangement into tabular format. The data underwent statistical analysis, succeeded by debate, examination, and interpretation.

Data Analysis

The following statistical tools were employed to analyze the data gathered: frequency count, percentage, mean, and standard deviation were used to determine the level of learners' academic achievement; weighted mean and standard deviation were utilized to assess the level of learners' metacognitive strategies; and Pearson product-moment correlation was applied to examine the relationship between learners' academic achievement and their metacognitive strategies in learning Social Studies.

Results and Discussion

This section presents the analysis and interpretation of the data. It also highlights key insights and understandings essential for formulating the study's conclusions and recommendations.

The Academic Achievement of Grade 4 Learners in Social Studies

The learners' academic achievement is determined by their cumulative grade in Social Studies, which is based on three components: written works, performance tasks, and quarterly assessments. Table 1 presents the learners' academic achievement levels in the subject.

Table 1. *Grade 4 Learners' Level of Academic Achievement in Social Studies*

Description	Grading Scale	Frequency Count	Percent
Outstanding	90 – 100	8	3.86
Very Satisfactory	85 – 89	96	46.38
Satisfactory	80 – 84	83	40.09
Fairly Satisfactory	75 – 79	20	9.66
Did not Meet Expectations	Below 75	0	0
Satisfactory	Mean = 84.46		SD = 3.22

Legend: 90–100 – Outstanding; 85–89 – Very Satisfactory; 80–84 – Satisfactory; 75–79 – Fairly Satisfactory; 74 and below – Did Not Meet Expectations.

Learners' academic achievement in Social Studies was found to be satisfactory, as reflected in the mean score of 84.46 with a standard deviation of 3.22 (see Table 1). This suggests that learners in District III have developed fundamental knowledge, skills, and understanding of the subject, though their grasp remains somewhat limited, as demonstrated through performance tasks.

Notably, among the 207 learners, 8 learners (3.86%) achieved an outstanding level. These learners surpassed core expectations, demonstrating advanced knowledge, skills, and understanding of the subject matter, and were able to apply these competencies flexibly and seamlessly to authentic tasks.

Moreover, 96 learners (46.38%) reached the very satisfactory level, indicating that they, too, developed the essential knowledge, skills, and understanding, and could transfer this learning automatically and effectively to practical tasks. Additionally, 83 learners (40.09%) attained a satisfactory level, while 20 learners (9.66%) fell under the fairly satisfactory category. Encouragingly, no learner scored under the did not meet expectations level.

These findings align with the performance trends in both elementary and secondary levels, particularly in HEKASI and Social Studies, which showed a higher percentage of proficiency (70.14% in elementary and 60.17% in secondary) compared to other subjects in the National Achievement Test (Philippine Education for All, 2015).

Level of Learners' Metacognitive Strategies in Learning Social Studies in Terms of Declarative, Procedural, and Conditional Strategies

Declarative knowledge refers to an individual's understanding of what they know, what they do not know, and what they aim to learn. It also encompasses awareness of others' knowledge. Table 2 presents the learners' level of metacognitive strategies in learning Social Studies, specifically in terms of declarative knowledge.

Table 2. Level of Learners' Metacognitive Strategies in Learning Social Studies in terms of Declarative Knowledge

Indicators	Weighted Mean	SD	Descriptive Rating	Qualitative Interpretation
1. I know what the teacher expects me to learn.	4.32	0.80	Always	Very high level of awareness
2. I learn more when I am interested in the topic	4.16	0.86	Often	High level of awareness
3. I have control over how well I learn.	4.11	0.66	Often	High level of awareness
4. I am good at remembering information.	4.06	0.86	Often	High level of awareness
5. I know what kind of information is most important to learn.	4.05	0.92	Often	High level of awareness
6. I am a good judge of how well I understand something.	3.96	0.88	Often	High level of awareness
7. I understand my intellectual strengths and weaknesses.	3.93	0.98	Often	High level of awareness
8. I am good at organizing information.	3.79	0.85	Often	High level of awareness
Overall Mean	4.05	0.12	Often	High level of awareness

Legend: 4.20–5.00 – Always – Very high level of awareness; 3.40–4.19 – Often – High level of awareness; 2.60–3.39 – Sometimes – Moderate level of awareness; 1.80–2.59 – Rarely – Low level of awareness; 1.00–1.79 – Never – Very low level of awareness.

Table 2 results indicate that learners demonstrate a high level of awareness in terms of declarative knowledge, as reflected in the overall mean score of 4.05 (SD = 0.40). This suggests that learners are aware of what they need to learn in Social Studies, recognizing the subject's focus on developing civic competence — preparing them to apply knowledge about their community and society, solve problems, and make decisions that promote social awareness beyond the classroom. This fosters more effective, informed, and independent learners as they become increasingly aware of social issues that challenge their perspectives.

The highest-rated items were: "I know what the teacher expects me to learn" (WM = 4.32; SD = 0.80) and "I learn more when I am interested in the topic" (WM = 4.16; SD = 0.86). These results imply that learners are aware of the learning objectives, primarily because teachers keep them informed about what they need to accomplish in each lesson. Additionally, learners tend to learn more when the topics spark their interest — particularly those that relate to their daily lives, such as community involvement and understanding their roles and responsibilities within the community.

Conversely, the items with lower mean scores were: "I understand my intellectual strengths and weaknesses" (WM = 3.93; SD = 0.98) and "I am good at organizing information" (WM = 3.79; SD = 0.85). These results suggest a need for teachers to assess and enhance learners' awareness of their intellectual strengths and weaknesses. By helping learners recognize what they excel at and where they need improvement, teachers can guide them to focus on areas that require more effort, ultimately supporting better performance in the subject.

According to Slabbert (2013), meta learning refers to a learner's ability to be aware of their learning process — enabling them to plan, execute, and evaluate their own learning. Meta learning involves having conscious control over how one learns. First, the learner must plan their approach to learning. This includes forming a mental representation of the task, ensuring they understand what is expected. From there, they can select an appropriate strategy to accomplish the task. While execution itself is not strictly a meta learning strategy,

it remains essential — as the learner must carry out the chosen strategy effectively to succeed.

Procedural knowledge refers to the understanding of how to perform cognitive tasks and what is necessary to complete them successfully. Table 3 presents the learners' level of metacognitive strategies in learning Social Studies concerning procedural knowledge.

Table 3. *Level of Learners' Metacognitive Strategies in Learning Social Studies in Terms of Procedural Knowledge*

Indicators	Weighted Mean	SD	Descriptive Rating	Qualitative Interpretation
1. I have a specific purpose for each strategy I use.	4.28	0.89	Always	Very high level of awareness
2. I am aware of what strategies I use when I study.	4.07	1.05	Often	High level of awareness
3. I find myself using helpful learning strategies automatically.	4.00	1.04	Often	High level of awareness
4. I try to use strategies that have worked in the past.	3.92	1.16	Often	High level of awareness
Overall Mean	4.07	0.13	Often	High level of awareness

Legend: 4.20–5.00 – Always – Very high level of awareness; 3.40–4.19 – Often – High level of awareness; 2.60–3.39 – Sometimes – Moderate level of awareness; 1.80–2.59 – Rarely – Low level of awareness; 1.00–1.79 – Never – Very low level of awareness.

Table 3 reveals that learners demonstrated a high level of procedural knowledge, as reflected in the overall mean score of 4.07 (SD = 0.72). This indicates that learners possess an understanding of themselves as learners, knowledge of various strategies, and awareness of when and why to apply those strategies. Metacognitive regulation — which involves planning, monitoring comprehension and task performance, and evaluating the effectiveness of strategies — is evident in their learning behaviors.

Notably, learners showed a very high level of awareness in using strategies with a specific purpose (WM = 4.28; SD = 0.89). This implies that they are capable of selecting appropriate strategies for specific problem contexts and recalling these strategies when facing similar situations. For example, a mnemonic technique learned in Social Studies may also be effectively applied to other subjects like Math and Science.

The item with the lowest mean score was "trying to use strategies that have worked in the past" (WM = 3.92; SD = 1.16). This suggests that learners are selective, preferring to adapt strategies that seem most relevant to their current learning situation, drawing on prior experiences when appropriate.

According to Schraw et al. (2006), procedural knowledge involves awareness and regulation of cognition, particularly knowledge about strategies. The authors highlight that cognitive knowledge tends to develop later, with children often showing initial deficits in this area. However, the results suggest that learners can still apply effective strategies without fully articulating their cognitive knowledge.

Following this, Table 5 presents the learners' level of metacognitive strategies in learning Social Studies in terms of conditional knowledge — which pertains to understanding when and why to apply specific strategies. This type of knowledge supports learners in allocating resources efficiently and employing strategies appropriately to enhance learning outcomes.

Table 4. *Level of Learners' Metacognitive Strategies in Learning Social Studies in Terms of Conditional Knowledge*

Indicators	Weighted Mean	SD	Descriptive Rating	Qualitative Interpretation
1. I use my intellectual strengths to compensate for my weaknesses.	3.96	1.20	Often	High level of awareness
2. I know when each strategy I use will be most effective.	3.80	0.99	Often	High level of awareness
3. I learn best when I know something about the topic.	3.75	1.10	Often	High level of awareness
4. I can motivate myself to learn when I need to.	3.59	1.17	Often	High level of awareness
5. I use different learning strategies depending on the situation.	3.40	1.25	Often	High level of awareness
Overall Mean	3.70	0.08	Often	High level of awareness

Legend: 4.20–5.00 – Always – Very high level of awareness; 3.40–4.19 – Often – High level of awareness; 2.60–3.39 – Sometimes – Moderate level of awareness; 1.80–2.59 – Rarely – Low level of awareness; 1.00–1.79 – Never – Very low level of awareness.

Table 4 reveals that learners exhibited a high level of awareness in terms of conditional knowledge, with an overall mean score of 3.70 (SD = 0.75). This indicates that learners are highly aware of how they learn Social Studies content. They can assess their learning needs, develop strategies to address these needs, and effectively implement those strategies. Furthermore, learners demonstrate metacognitive abilities that help them become reflective learners, while also acquiring specific learning strategies.

More specifically, learners showed a high regard for utilizing their intellectual strengths to compensate for weaknesses (WM = 3.96; SD = 1.20) and knowing when a particular strategy would be most effective (WM = 3.80; SD = 0.99). This reflects metacognitive awareness — an understanding of how they think and learn. It implies that learners are conscious of their thought processes and the strategies they apply, enabling them to be more deliberate and mindful in their learning. Additionally, they recognize how to adapt

these strategies for different contexts and situations.

However, the items with the lowest mean scores were "I can motivate myself to learn when I need to" (WM = 3.59; SD = 1.17) and "I use different learning strategies depending on the situation" (WM = 3.40; SD = 1.25). This suggests that while learners possess reflective abilities and some level of self-regulation, they may still struggle with self-motivation and flexibly adapting strategies to fit diverse learning situations.

According to Schraw et al. (2006), conditional cognitive knowledge refers to knowing why and when to use a particular strategy. This type of knowledge is essential for promoting independent learning and fostering the ability to apply strategies effectively across different learning tasks.

Correlation Analysis between the Learners' Academic Achievement and Their Metacognitive Strategies in Learning Social Studies

To determine the strength and direction of the relationship between the independent variable (comprehension strategies) and the dependent variable (learners' academic achievement), Pearson Product-Moment Correlation was applied. The results, displayed in Table 5, present the Pearson correlation coefficients alongside the p-values for each variable, providing insight into the significance and nature of these relationships.

Table 5. *Correlation Analysis between the Learners' Academic Achievement and Their Metacognitive Strategies in Learning Social Studies*

Indicators	r	p-values	Remarks
Declarative Knowledge	0.091	0.194	Not significant
Procedural Knowledge	0.040	0.564	Not Significant
Conditional Knowledge	0.119	0.087	Not Significant

Level of significance: $\alpha=0.05$

Table 5 reveals that the components of metacognitive strategies did not show a significant relationship with learners' academic achievement. Specifically, declarative knowledge ($r=0.091$; $p=0.194$), procedural knowledge ($r=0.040$; $p=0.564$), and conditional knowledge ($r=0.119$; $p=0.087$) all yielded non-significant results. This indicates that learners' awareness of their metacognitive strategies does not influence their academic performance in Social Studies.

Consequently, the null hypothesis — stating that there is no significant relationship between learners' academic achievement and their metacognitive strategies — is accepted. This suggests that other factors, which were not covered in this study, may contribute to learners' academic performance in the subject.

The findings contradict previous research, which emphasized the critical role of metacognition in education. According to Costa and Kallick (2001), metacognition helps learners develop plans, monitor their progress, and evaluate the effectiveness of their strategies — promoting greater involvement in the learning process. Similarly, Vadhan and Stander (2004) noted that effective learners demonstrate stronger metacognitive skills, employ problem-solving strategies, and more accurately predict their performance. Additionally, Turan and Demirel (2010) found that learners with high academic achievement typically exhibit higher levels of metacognitive awareness.

Conclusions

Based on the study's findings, the following key conclusions were drawn:

Learners demonstrate basic knowledge, skills, and understanding of the subject matter, though their comprehension remains limited when engaged in authentic performance tasks. They exhibit awareness of themselves as learners, understand various learning strategies, and recognize when and why to apply these strategies. Increased awareness of metacognitive strategies may contribute to improved academic performance in Social Studies, suggesting that fostering this awareness could enhance learners' learning outcomes.

Based on the conclusions drawn from the study, the following recommendations are proposed:

Learners are encouraged to further explore their metacognitive strategies by engaging in activities that promote planning, comprehension monitoring, task performance evaluation, and reflection on the effectiveness of their strategies. This can help improve their academic achievement in Social Studies. Teachers are encouraged to incorporate activities that enhance learners' metacognitive awareness. This approach can contribute to better performance not only in Social Studies but across other academic subjects as well. Future researchers may consider replicating this study in other subject areas to examine how metacognitive strategies relate to academic achievement in different contexts.

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