

Relationship Between the Cooperative Learning Method and Metacognitive Skills Among Grade Six Learners

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ABSTRACT

This study examined the relationship between cooperative learning strategies and metacognitive skills among Grade 6 learners in Social Studies in San Fernando District II, Division of Bukidnon, during the School Year 2025–2026. Specifically, it determined the extent of implementation of cooperative learning strategies, group discussion, peer teaching, the jigsaw technique, think–pair–share, and collaborative projects, and assessed learners’ metacognitive skills in planning, monitoring, and evaluating.

A descriptive–correlational research design was employed, involving 135 Grade 6 learners selected through simple random sampling. Data were collected using adapted instruments from Fernandez-Rio et al. (2017) and Altindag and Senemoglu (2013). The instruments demonstrated strong internal consistency, with Cronbach’s alpha coefficients of 0.93 for cooperative learning strategies and 0.91 for metacognitive skills. Construct validity was established through expert validation and pilot testing.

Extent of implementation of cooperative learning strategies, group discussion, peer teaching, the jigsaw technique, think–pair–share, and collaborative projects, and assessed learners’ metacognitive skills in Results revealed that cooperative learning strategies were implemented at a very high level, except for peer teaching, which was rated moderate. Learners demonstrated a very high level of metacognitive skills. Correlation analysis showed a significant positive relationship between cooperative learning strategies and metacognitive skills ($r = 0.619$, $p < 0.05$). However, peer teaching did not show a significant relationship, suggesting possible limitations in its structure and implementation.

The findings indicate that structured and interactive cooperative learning strategies enhance learners’ metacognitive development. It is recommended that teachers strengthen peer teaching through guided frameworks and training. Future studies may employ experimental or mixed-methods designs and include additional variables, such as motivation and classroom environment, to further examine causal relationships.

Keywords: Cooperative learning strategies, metacognitive skills, group discussion, peer teaching, jigsaw technique, think-pair-share, collaborative projects, Social Studies, Grade 6 learners

INTRODUCTION

Cooperative Learning Method and Metacognition Skill go hand in hand and affect one another in the learning process. Cooperative Learning promotes interaction, collaboration, and shared responsibility among the learners which results in developing higher-order thinking and self-regulated learning. In particular, the consistent use of cooperative learning strategies can improve the metacognitive awareness and the regulation of learning by learners. Rivas et al. (2022) presented a model implying a significant role for motivational factors such as having a clear learning purpose, focusing on goals and personal belief to develop metacognitive skills. These skills can further be strengthened in cooperative learning environments that encourage shared goal setting, peer discussion, and collective reflection. Similarly, Saez-Zevallos et al. (2025) demonstrated the mediating role of the concept of self-efficacy as a link between achievement motivation and learning strategies, and educational achievement, stressing that collaboration and peer interaction can boost confidence and reflective thinking of the learner.

Metacognition skills have become widely accepted as vital to learners' academic success because they allow students to plan, monitor, and evaluate their learning strategies. Such skills particularly matter to those students who may be struggling academically, as such skills can contribute to making them more aware of their thinking processes and behaviors in their learning. According to the U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2020) about 40% of the learners taking basic education drop out before finishing their grade level. This calls for the need to help learners develop strong metacognitive skills that enable them to take control of their learning, stay motivated and solve academic problems. Teachers have an important role to play in facilitating this development by providing learning environments that promote reflection, self-regulation, and active participation.

Despite the benefits of cooperative learning in fostering the development of metacognition, research indicates that learners sometimes do not live up to teachers' expectations, even when cooperative learning structures are used. This situation may occur when students find group activities boring or when they do not share similar goals with their groupmates or teachers. In such a case, cooperative learning might not help much with the development of metacognitive skills. However, learners are likely to work more effectively when cooperative learning activities are meaningful, interactive, and have clear goals. Under such circumstances, students are more likely to use metacognitive strategies such as planning, monitoring, and evaluating their learning processes, which could result in better academic outcomes (Agrawal et al., 2025).

In the San Fernando District, Division of Bukidnon learners have been noted to encounter difficulties in managing their goals, planning their learning tasks, staying focused on difficult activities, demonstrating appropriate social behavior, and understanding how their actions affect others. Stanton et al. (2021) argued that the absence of metacognitive skills leads learners to be passive during instruction and to perceive learning as teacher-directed rather than an active process. Furthermore, they may not possess the skills in executive control, which is required to carry out complex tasks independently in their academic work. Although there is general support for academic learning in schools, there are still cooperative learning experiences that help learners develop the skills needed to handle complex learning situations and adapt to change.

Given these challenges, it is important to further explore the contribution of cooperative learning strategies in the development of metacognition skills in learners, particularly in the Social Studies education domain. Cooperative learning environments allow the learners to participate in group planning, peer feedback, and group reflection, which are essential components of metacognitive development (Sword, 2021). While previous research has examined cooperative learning and metacognitive skills independently, little research has explored their connection in Social Studies classrooms.

This study aims to examine the relationship between cooperative learning strategies and learners' metacognitive skills in Social Studies in the San Fernando District, Division of Bukidnon. The findings of this study may help educators develop more effective instructional strategies that improve learners' collaborative learning experiences and increase their ability to plan, monitor, and evaluate their learning processes.

This study is anchored on the Social Interdependence Theory suggested by Johnson and Johnson (2004). According to this theory, social interdependence is the situation in which individuals work together toward a common goal, and an individual's activities shape the fate of others in the group. The theory highlights how the nature of interdependence between individuals (either positive, (cooperative) or negative, (competitive) plays an important role in their learning outcome in a group setting. In cooperative situations, individuals perceive that they can achieve their goals only if other members of the group also achieve their goals; this promotes collaboration, shared responsibility, and mutual support in the learning process.

Furthermore, Shimizu (2020) defended the concept of positive interdependence, explaining that in such situations, group members benefit from group interaction because they help one another achieve learning goals. These theories present a useful framework for understanding cooperative learning, because both theories emphasize the importance of learning through meaningful social interaction.

On the other hand, the dependent variable in this study is the development of learners' metacognitive skills. Metacognitive skills are the abilities individuals use to think about and regulate their own thinking processes.

These skills involve planning learning strategies, setting goals, monitoring one's understanding, evaluating learning outcomes, and adapting strategies as needed. The conceptual frameworks of this study are depicted in Figure 1, which explains how various cooperative learning strategies may influence the development of learners' metacognitive skills in Social Studies.

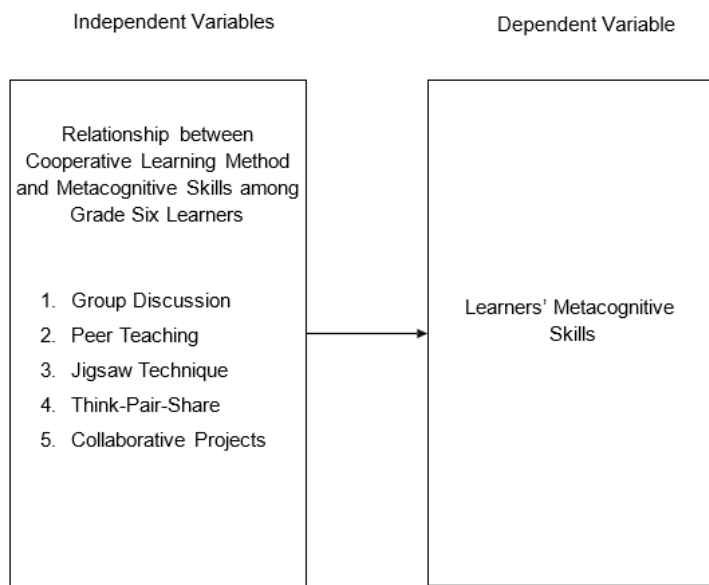


Figure 1. Schematic Diagram showing the Relationship of the Independent and Dependent Variables of the Study

This study aims to examine the relationship between the cooperative learning method and the development of metacognitive skills among Grade 6 learners in San Fernando District II, Division of Bukidnon, for the School Year 2025-2026.

Specifically, the purpose of this study is to answer the following questions:

1. What is the level of cooperative learning method in terms of group discussion, peer teaching, jigsaw technique, think-pair-share, and collaborative projects among the grade six learners?
2. What is the level of metacognitive skills of the Grade Six learners?
3. Is there a significant relationship between the cooperative learning method and metacognitive skills in Grade Six learners?

Hypothesis of the Study

The hypothesis was tested at a 0.05 level of significance.

Ho: There is no significant relationship between cooperative learning methods and metacognitive skills among Grade six learners.

Delimitation of the Study

The study aims to establish the relationship between cooperative learning methods and the development of metacognitive skills of Grade six in the Social Studies subject in San Fernando District II, Bukidnon Division, during the School Year 2025-2026. It particularly addresses the cooperative learning strategies learners use, such as group discussion, peer teaching, the jigsaw technique, think-pair-share, and collaborative projects.

The research is limited to Grade Six students currently enrolled in the selected public elementary schools in the district. It does not consider learners of other grade levels or topics other than Social Studies. Furthermore, the study is limited to identifying the relationship between cooperative learning strategies and metacognitive skills and does not consider other factors that may affect learners' metacognitive development.

METHODS

Research Design

This study employed a descriptive–correlational research design to examine the relationship between cooperative learning strategies and metacognitive skills among Grade Six learners in Social Studies. Descriptive–correlational research is appropriate for studies that aim to describe existing conditions and determine relationships between variables without manipulating the research environment (Creswell & Creswell, 2018).

Data were collected at a single point in time using a structured survey questionnaire. The learners' responses were analyzed using appropriate statistical methods to assess the extent of cooperative learning strategies and metacognitive skills, as well as the relationship between these variables.

Research Locale

The study was conducted in the San Fernando II District, Division of Bukidnon, Philippines. The district consists of several integrated public schools that serve learners from rural and geographically diverse communities. These schools provide basic education to learners in the municipality of San Fernando and implement the Department of Education's standard curriculum.

The schools included in the study were Kibongkog Integrated School, Bonacao Integrated School, Iglugsad Integrated School, Namnam Integrated School, and Matupe Integrated School. These schools were selected because they represent typical public school environments within the district and offer Social Studies instruction for Grade Six learners.

Respondents of the Study

The respondents of this study were Grade Six learners enrolled in the integrated schools of San Fernando II District during the School Year 2025–2026. Grade Six learners were selected because they are at a stage of development where higher-order thinking skills and reflective learning processes begin to emerge. At this level, learners are increasingly capable of evaluating their own learning strategies and participating in collaborative learning activities.

A total population of 183 Grade Six learners was identified in the selected schools. From this population, 135 learners were selected as respondents.

Table 1. Distribution of Respondents by School

School	Population	Sample
Kibongkog Integrated School	41	30
Bonacao Integrated School	32	25
Iglugsad Integrated School	40	30
Namnam Integrated School	40	30
Matupe Integrated School	30	20
Total	183	135

Sampling Procedure

The study utilized simple random sampling to ensure that each Grade Six learner in the district had an equal chance of being selected as a respondent. Using the Raosoft sample size calculator, a sample size of 135 learners was determined from the total population of 183 learners.

Random sampling helped ensure that the selected respondents represented the population and minimized the possibility of selection bias. The respondents were randomly selected from the integrated schools within San Fernando II District.

Research Instrument

The study utilized a structured questionnaire composed of two parts.

The first part measured cooperative learning strategies, adapted from Fernandez-Rio et al. (2017), covering group discussion, peer teaching, jigsaw technique, think–pair–share, and collaborative projects. The second part assessed metacognitive skills, adapted from Altindag and Senemoglu (2013), focusing on planning, monitoring, and evaluating.

To ensure content validity, the instruments were reviewed by three experts in educational research and Social Studies instruction. Revisions were made based on their feedback to improve clarity, relevance, and alignment with the study variables.

A pilot test was conducted among 30 Grade 6 learners who were not included in the final sample. Reliability analysis using Cronbach’s alpha revealed high internal consistency, with coefficients of 0.93 for the cooperative learning strategies scale and 0.91 for the metacognitive skills scale, both exceeding the acceptable threshold of 0.70.

Construct validity was supported through item analysis, where all items demonstrated acceptable item-total correlations, indicating that the instruments adequately measured the intended constructs.

Scoring Procedure

Responses were interpreted using a five-point Likert scale.

A. Cooperative Learning Strategies

Scale	Range	Descriptive Rating	Interpretation
5	4.21–5.00	Always	Very High
4	3.41–4.20	Often	High
3	2.61–3.40	Sometimes	Moderate
2	1.81–2.60	Rarely	Low
1	1.00–1.80	Never	Very Low

B. Metacognitive Skills

Scale	Range	Descriptive Rating	Interpretation
5	4.21–5.00	Always	Very High
4	3.41–4.20	Often	High

3	2.61–3.40	Sometimes	Moderate
2	1.81–2.60	Rarely	Low
1	1.00–1.80	Never	Very Low

Data Gathering Procedure

Prior to data collection, the researcher secured permission from the Schools Division Superintendent of Bukidnon, the District Supervisor of San Fernando II District, and the school heads of the participating schools.

After obtaining the necessary approvals, the researcher coordinated with the Grade Six teachers regarding the distribution and administration of the questionnaires. The purpose of the study was explained to both the teachers and the learners to ensure that the respondents understood the nature of the research.

The questionnaires were distributed to the selected respondents during scheduled class periods. Teachers assisted in explaining the instructions and clarifying the questionnaire items when necessary. After completion, the questionnaires were collected, checked for completeness, and prepared for data analysis.

The responses were then coded, tabulated, and organized for statistical analysis.

Ethical Considerations

Ethical standards were strictly observed throughout the conduct of the study. Permission to conduct the research was obtained from the Schools Division Office of Bukidnon, the district supervisor, and the school heads of the participating schools.

Participation in the study was voluntary. The respondents were informed about the purpose of the research and were assured that their responses would remain confidential. No personal identifiers were collected to ensure participant anonymity.

All collected data were used solely for academic purposes and were treated with strict confidentiality.

Statistical Treatment of Data

The data collected were analyzed using both descriptive and inferential statistical techniques.

The mean and standard deviation were used to assess the levels of cooperative learning strategies and metacognitive skills among learners.

To determine the relationship between the independent variable (cooperative learning strategies) and the dependent variable (metacognitive skills), the Pearson Product–Moment Correlation Coefficient (Pearson r) was used. This statistical test measured the strength and direction of the relationship between the two variables.

RESULTS AND DISCUSSION

This chapter presents the analysis and interpretation of the data gathered from the respondents. The findings are organized according to the research problems of the study. The results describe the level of cooperative learning methods used by Grade Six learners, the level of metacognitive skills among them, and the relationship between these methods and metacognitive skills.

Level of Cooperative Learning Method among Grade Six Learners

Table 2. Overall Level of Cooperative Learning Method among Grade Six Learners

Cooperative Learning Method	Mean	SD	Interpretation
Group Discussion	4.54	0.346	Very High

Peer Teaching	3.27	1.046	Moderate
Jigsaw Technique	4.40	0.744	Very High
Think-Pair-Share	4.58	0.438	Very High
Collaborative Projects	4.47	0.542	Very High
Overall Mean	4.25	0.623	Very High

Table 2 presents the overall level of cooperative learning methods among Grade Six learners in Social Studies. The findings reveal an overall mean of 4.25 (SD = 0.623) interpreted as Very High, indicating that cooperative learning strategies are frequently practiced in the classroom. Among the strategies, think-pair-share obtained the highest mean (M = 4.58) followed by group discussion (M = 4.54), collaborative projects (M = 4.47), and jigsaw technique (M = 4.40), all interpreted as very high. In contrast, peer teaching received a moderate rating (M = 3.27), indicating that this strategy is less consistently practiced than the other cooperative learning methods.

The findings revealed that cooperative learning strategies are generally implemented at a very high level, with the exception of peer teaching, which was rated moderate and showed no significant relationship with metacognitive skills. This divergence suggests that not all cooperative learning strategies equally contribute to metacognitive development.

One possible explanation for the non-significant relationship of peer teaching is the lack of structured implementation. Unlike strategies such as think-pair-share and collaborative projects, which follow clear procedural steps, peer teaching may be applied informally without sufficient guidance or scaffolding. As a result, learners may focus more on task completion rather than engaging in deeper cognitive processes such as planning, monitoring, and evaluating.

Additionally, peer teaching requires learners to possess both content mastery and the ability to explain concepts effectively. Without adequate preparation or teacher facilitation, learners may struggle to provide accurate explanations, limiting opportunities for metacognitive engagement. This aligns with the findings of Cooper and Finkelstein (2021), who noted that poorly structured peer interaction may not lead to meaningful cognitive gains.

In contrast, collaborative projects demonstrated the strongest relationship with metacognitive skills. This may be attributed to the extended and structured nature of such tasks, which require learners to plan activities, monitor progress, and evaluate outcomes collectively. These processes directly engage metacognitive regulation, supporting the findings of Siagian et al. (2022) that sustained collaborative tasks enhance metacognitive awareness.

The results highlight the importance of instructional design in cooperative learning. Simply implementing group-based activities is not sufficient; rather, the effectiveness of cooperative learning depends on how well the strategies are structured, guided, and aligned with cognitive objectives. This supports the Social Interdependence Theory (Johnson & Johnson, 2004), which emphasizes that positive interdependence must be intentionally structured to achieve meaningful learning outcomes.

While the overall findings indicate a significant relationship between cooperative learning and metacognitive skills, caution must be exercised in interpreting causality. Other variables such as learner motivation, teacher facilitation skills, and classroom environment may also influence metacognitive development. This suggests the need for more comprehensive research designs to further examine these relationships.

Level of Metacognitive Skills among Grade Six Learners

Table 3. Overall Level of Metacognitive Skills among Grade Six Learners

Variable	Mean	SD	Interpretation
Metacognitive Skills	4.60	0.358	Very High

Table 3 shows the overall level of metacognitive skills among Grade Six learners. The results indicate an overall mean of 4.60 (SD = 0.358) interpreted as Very High, suggesting that learners frequently demonstrate awareness and regulation of their own learning processes.

The high level of metacognitive skills indicates that learners actively plan, monitor, and evaluate their learning strategies. Learners can reflect on whether their learning strategies are effective, identify reasons for learning difficulties, and adjust their approaches as needed. These behaviors demonstrate strong self-regulation and cognitive awareness, which are essential components of effective learning.

The findings imply that Grade Six learners possess strong abilities to manage their own learning processes. Through metacognitive awareness, learners can evaluate their strengths and weaknesses, monitor their understanding of the lesson, and apply strategies to improve their academic performance. Such abilities contribute to independent learning and improved academic achievement.

These results support the theory of metacognition proposed by Flavell (2020), who described metacognition as the awareness and control of one's own cognitive processes. According to this theory, learners who actively plan, monitor, and evaluate their learning strategies demonstrate stronger problem-solving abilities and better academic performance. Similarly, Efklides (2020) explained that metacognitive awareness enables learners to regulate their thinking processes and adjust strategies when learning difficulties arise.

Furthermore, research has emphasized the importance of metacognitive skills for improving learning outcomes. Baliram and Kapur (2021) reported that students with strong metacognitive awareness demonstrate higher academic achievement and improved learning strategies. Likewise, Yildirim and Demirtas (2022) highlighted that metacognitive skills contribute significantly to critical thinking, problem solving, and independent learning among students.

Overall, the findings indicate that Grade Six learners demonstrate a strong capacity for reflective thinking and self-regulated learning. The very high level of metacognitive skills suggests that learners can effectively manage their learning strategies and actively monitor their academic progress.

Relationship between Cooperative Learning Methods and Metacognitive Skills

Table 4. Correlation between Cooperative Learning Methods and Metacognitive Skills

Variable	r	p-value	Interpretation
Group Discussion	.327	.000	Significant
Peer Teaching	-.047	.606	Not Significant
Jigsaw Technique	.371	.000	Significant
Think-Pair-Share	.529	.000	Significant
Collaborative Projects	.823	.000	Significant
Overall	.619	.000	Significant

The results reveal a significant positive relationship between cooperative learning methods and metacognitive skills ($r = .619$, $p = .000$) among Grade Six learners. This indicates that increased engagement in cooperative learning strategies is associated with higher levels of metacognitive skills.

Specifically, group discussion, jigsaw technique, think-pair-share, and collaborative projects demonstrated significant positive relationships with metacognitive skills. Among these strategies, collaborative projects showed the strongest relationship with metacognitive skills ($r = .823$), suggesting that extended collaborative

activities requiring shared responsibility and problem solving strongly promote learners' ability to plan, monitor, and evaluate their learning. However, peer teaching showed no significant association with metacognitive skills ($r = -.047$), suggesting that the strategy is not yet consistently structured or effectively implemented in the classroom.

The findings imply that cooperative learning environments promote reflective thinking and self-regulated learning among students. Through collaborative activities, learners articulate ideas, evaluate different perspectives, and reflect on their learning strategies. These processes enhance their metacognitive awareness and ability to manage their own learning.

The results are consistent with the Social Interdependence Theory (Johnson & Johnson, 2004), which states that cooperative learning structures encourage learners to support one another in achieving shared academic goals. In such environments, learners actively engage in discussion, explanation, and reflection, which strengthens their cognitive and metacognitive processes.

Previous studies also support these findings. Siagian, Darhim, and Juandi (2022) found that cooperative learning strategies enhance learners' metacognitive awareness by encouraging them to articulate learning goals, monitor progress, and evaluate strategies. Similarly, Maden (2021) and Koc et al. (2020) reported that cooperative learning strategies such as jigsaw and think-pair-share promote self-monitoring and reflective thinking among learners. Moreover, Hertz-Lazarowitz et al. (2018) emphasized that collaborative projects significantly improve learners' cognitive engagement and metacognitive development through sustained group interaction and shared learning responsibilities.

Overall, the findings demonstrate that cooperative learning methods play a significant role in enhancing metacognitive skills among Grade Six learners. When learners participate in structured collaborative learning activities, they develop a stronger awareness of their thinking processes and become more capable of regulating their own learning.

CONCLUSION

The findings of the study indicate that cooperative learning strategies are widely implemented among Grade 6 learners in Social Studies, with most strategies showing very high use. However, peer teaching was practiced only moderately, suggesting a need for more structured implementation.

Learners exhibited a very high level of metacognitive skills, indicating strong abilities in planning, monitoring, and evaluating their learning processes. These findings suggest that learners are capable of regulating their cognitive processes and engaging in reflective learning.

Furthermore, the study established a significant positive relationship between cooperative learning strategies and metacognitive skills. Strategies such as group discussion, jigsaw technique, think-pair-share, and collaborative projects were found to significantly support metacognitive development. In contrast, peer teaching did not show a significant relationship, highlighting the importance of structured implementation and teacher guidance.

The results imply that cooperative learning, when effectively designed and facilitated, can enhance learners' metacognitive awareness and self-regulated learning. However, not all cooperative strategies yield the same level of impact, emphasizing the need for careful instructional planning.

Future studies should consider using experimental or mixed-method research designs to determine the causal effects of cooperative learning strategies on metacognitive skills. Incorporating qualitative data such as classroom observations and interviews may provide deeper insights into how learners engage in metacognitive processes during cooperative activities.

Moreover, expanding the study across multiple regions and including diverse learner populations would enhance the generalizability of findings. Additional variables such as learner motivation, teacher facilitation skills, and

classroom environment should also be examined to better understand the complex factors influencing metacognitive development.

A more comprehensive approach to research in this area will contribute to the development of more effective instructional strategies that promote both collaborative learning and higher-order thinking skills.

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