

Improving Mathematics Learning Outcomes through Think-Pair-Share in Grade IV SDN 09 West Pontianak District

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Abstract: This study was motivated by low mathematics learning outcomes among fourth-grade students at SD Negeri 09 West Pontianak, as indicated by summative assessment results that were below the Minimum Mastery Criteria (KKTP). Low achievement was influenced by weak learning motivation and students' passive participation during mathematics learning activities. This Classroom Action Research aimed to improve students' mathematics learning outcomes through the application of the cooperative learning model *Think–Pair–Share* (TPS). The study consisted of two cycles following Kurt Lewin's model: planning, acting, observing, and reflecting. The research subjects consisted of 38 students from Class IV B. Data were collected through test results and observation sheets, and then analyzed both quantitatively and qualitatively. The findings show that learning completeness increased from 38% in the pre-cycle to 42% in cycle I and 79% in cycle II. Students' learning motivation also increased from 58% in the pre-cycle to 64.29% in cycle I and 88.57% in cycle II. These results indicate that the *Think–Pair–Share* model effectively improves learning achievement and motivation in mathematics.

Keywords: cooperative learning, learning outcomes, motivation, *Think–Pair–Share*.

INTRODUCTION

Mathematics learning outcomes among Class IV B students at SD Negeri 09 West Pontianak were below the Minimum Mastery Criteria (KKTP), as reflected in daily test scores that were mostly below the expected standard (Nir Singgih, 2022). This problem is not only related to difficulty in understanding concepts but also caused by low learning motivation (Yogi Fernando et al., 2024). Students tend to be passive, less engaged in learning activities, and rarely review the material outside of class, which results in suboptimal achievement (Bariyah et al., 2023; Sakinah, 2023).

Efforts to improve the quality of mathematics learning require effective learning strategies and the ability to stimulate students' active participation. Teachers are required to implement innovative, student-centred learning approaches that enable interaction, collaboration, and critical thinking (Lutfiyani, 2020). Cooperative learning is one of the recommended strategies to foster positive student attitudes and improve academic achievement.

One cooperative model proven effective is Think–Pair–Share (TPS). This model encourages students to think independently, collaborate in pairs, and share results with the class (Meinalufi et al., 2021; Rismayanti et al., 2020). TPS positively impact mathematical understanding, problem-solving abilities, and learning motivation (Khaesarani & Hasibuan, 2021; Tela et al., 2019). Therefore, its implementation is expected to improve students' mathematics learning outcomes at SD Negeri 09 West Pontianak.

Based on this analysis, this research aims to determine the effectiveness of the Think–Pair–Share model in improving students' mathematics learning outcomes and motivation.

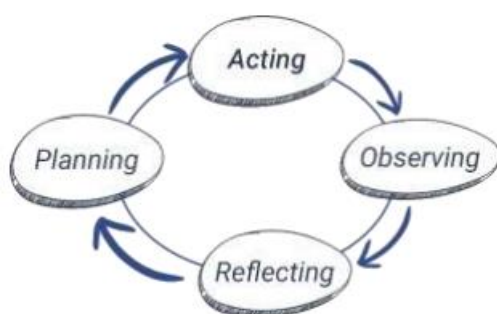
METHOD

This research employed Classroom Action Research (CAR) based on Kurt Lewin's four stages: planning, acting, observing, and reflecting (Machali, 2022; Slameto, 2015). The research was conducted in Class IV B of SD Negeri 09 West Pontianak with 38 students (19 boys and 19 girls). The problem focused on low mathematics learning outcomes and student motivation.

The implementation of this Classroom Action Research was carried out in two cycles, each consisting of several structured stages based on the TPS model. In the Think stage, students were given time to independently analyze and reflect on the problems presented by the teacher. They were encouraged to formulate their own ideas or solutions before engaging in discussion. The process continued to the Pair stage, where students worked with a partner to exchange opinions, compare answers, and deepen understanding through collaborative dialogue. Afterwards, in the Share stage, each pair presented the results of their discussion in front of the class, allowing broader interaction, feedback, and clarification of concepts.

Data collection was conducted using learning outcome tests and observation sheets designed to measure students' academic progress and learning motivation during the learning process. The data obtained were analyzed using descriptive quantitative and qualitative techniques to interpret patterns of change occurring in each cycle (Erik Ade Putra, 2019; Handayani, 2020; Aziza, 2023). Research success was determined based on two indicators, learning completeness reaching at least 75% and students' motivation scores exceeding 76%.

Image 1. Kurt Lewin's PTK Model Cycle



RESULTS

After the learning activities were carried out over two cycles in Class IV B of SD Negeri 09 West Pontianak, the results obtained are presented as follows:

Table 1. Summary of Learning Outcomes Participant Educate

No	Information	Pre	Cycle 1	Cycle 2
1	Number of students	38	38	38
2	Completed	13	16	5
3	Incomplete	25	22	5
4	Completeness results Study	38%	42%	79%
5	Average Score	68%	70.11	86.84

Level success Action

- 1) $86\% \leq NR \leq 100\%$ classified as Very Good
- 2) $76\% \leq NR \leq 85\%$ classified as Good
- 3) $60\% \leq NR \leq 75\%$ classified as Enough
- 4) $55\% \leq NR \leq 59\%$ classified as Not Enough
- 5) $0\% \leq NR \leq 54\%$ classified as Very Not Enough

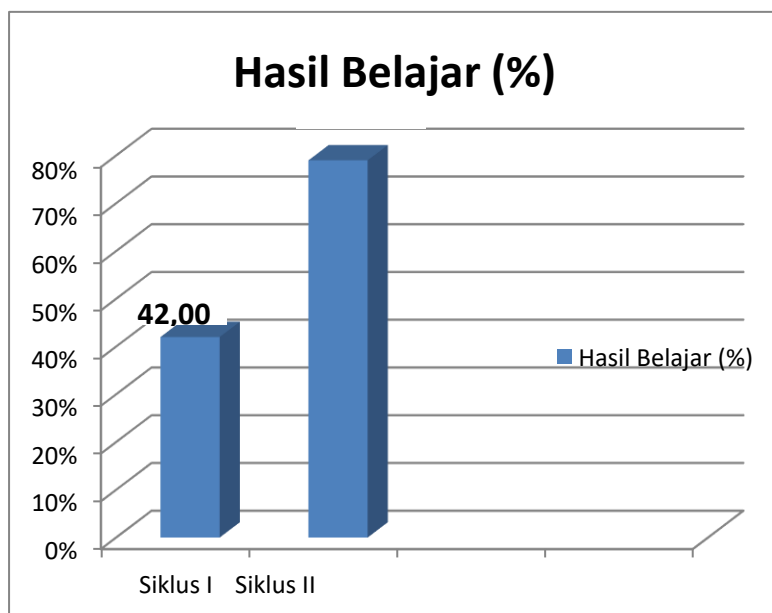
Learning completeness increased from 38% in pre-cycle to 42% in cycle I, and 79% in cycle II, exceeding the minimum requirement of 75%.

Table 2. Motivation Observation

Aspect	Pre	Cycle 1	Cycle 2
Motivation (%)	58%	64.28%	88.57%

The improvement in participants' learning outcomes from the cycle I and cycle II tests can be seen in the diagram below:

Diagram 1. Learning Outcomes



DISCUSSION

The findings of this study indicate that the implementation of the Think–Pair–Share (TPS) cooperative learning model provides a significant contribution to improving students' mathematics learning outcomes as well as their learning motivation. Through cooperative learning activities, students are encouraged to exchange ideas, actively engage with assigned tasks, and collaborate in solving problems, which ultimately promotes deeper conceptual understanding. This finding is consistent with previous research, which demonstrates that TPS is effective in enhancing students' mathematical achievement (Rismayanti et al., 2020; Meinalufi et al., 2021) and plays an important role in increasing motivation, participation, and enthusiasm for learning (Nurfa Juita, 2023).

The interactive and structured learning process provided by the TPS model, particularly during the discussion and presentation stages, allows students to construct knowledge collaboratively, articulate their reasoning, and learn from their peers' perspectives. Such active involvement not only reduces learning anxiety toward mathematics but also fosters greater self-confidence and improves communication

skills. Therefore, the TPS model creates a more meaningful learning atmosphere, strengthens students' engagement during the learning process, and enhances overall learning performance. With these advantages, TPS can be considered a relevant and effective instructional model to be applied in mathematics learning at the elementary school level.

CONCLUSION

This Classroom Action Research concludes that the implementation of the Think–Pair–Share (TPS) cooperative learning model has proven to be effective in enhancing both students' mathematics learning outcomes and their learning motivation. Throughout the learning cycles, students demonstrated noticeable improvement in the mastery of mathematical concepts as well as increased active participation and enthusiasm in the learning process. The gradual enhancement observed across cycles reflects the positive impact of structured collaborative interaction, which enables students to think independently, engage in meaningful peer discussion, and confidently express ideas during classroom presentations.

These findings reinforce the view that the TPS model is highly relevant as a pedagogical strategy capable of creating a more dynamic, interactive, and supportive learning environment. Therefore, the TPS model is strongly recommended as an alternative instructional approach in elementary mathematics education, particularly for addressing learning challenges related to low achievement and insufficient motivation. The successful implementation of this model also suggests potential for broader application in various subjects requiring active engagement and conceptual understanding.

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