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The Team Games Tournament (TGT) Type Cooperative Learning Model in an Effort to Improve Learning Motivation and Mathematics Learning Outcomes of Students in Class IV SDN 05 Pasaman

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ABSTRACT

This study aims to improve the learning motivation and learning outcomes of fourth-grade students of SDN 05 Pasaman through the implementation of the Team Games Tournament (TGT) learning model. The background of this study began with the low learning motivation and learning outcomes of students in Mathematics, where only 6 out of 22 students achieved the Learning Objective Achievement Criteria (KKTP) of 75. This study employed Classroom Action Research (CAR) using the Kemmis and McTaggart model, conducted in two cycles. Each cycle consisted of planning, action, observation, and reflection. Data were collected using teacher and student observation sheets, learning outcome tests, learning motivation questionnaires, and documentation. The results showed an increase in students' learning motivation and mathematics learning outcomes. Learning motivation increased from 79% in Cycle I to 93% in Cycle II. The average learning outcomes increased from 70 in Cycle I to 85 in Cycle II, while the percentage of learning completion increased from 55% to 91%. These findings indicate that the implementation of the TGT cooperative learning model was accompanied by improvements in student learning motivation and mathematics learning outcomes.

1. Introduction

Basic education is an important foundation in shaping students' knowledge, skills, character, and thinking abilities as provisions for continuing their education to the next level (Khotimah, 2019). The implementation of the Independent Curriculum emphasizes student-centered learning through active, meaningful, contextual, and enjoyable learning experiences that optimally develop competencies and character (Trinova et al., 2026). In its implementation, teachers are required to create a learning process that is not only oriented towards achieving learning outcomes but also able to increase student learning motivation through various innovative

learning strategies and models (Rosa et al., 2024). One of the subjects that plays an important role in elementary education is mathematics (Mauliana et al., 2025). Mathematics not only serves as a basic science for the development of other sciences but also trains logical, critical, systematic, creative, and problem-solving skills needed in everyday life (Jannah et al., 2024). Mathematics learning aims to develop logical, critical, and systematic thinking skills. Mathematics is an abstract science that requires a learning process that can help students understand concepts gradually (Siregar & Adinda, 2025). Mathematics teaching in elementary schools is expected to not only emphasize numeracy skills but also provide opportunities for students to develop conceptual understanding through meaningful learning experiences. Mastering mathematical concepts from an early age is very important because each concept is interrelated and forms the basis for subsequent concepts. Therefore, the mathematics learning process needs to be designed to connect mathematical concepts with real-life situations, so that students can understand the benefits of mathematics in everyday life.

However, various studies show that mathematics is still considered a difficult subject by most elementary school students (Novianto et al., 2024). This perception leads to low learning motivation, lack of courage to ask questions or express opinions, and low self-confidence in solving mathematical problems. This condition ultimately impacts low student learning outcomes. Learning motivation is one of the important factors that determine learning success because it is the driving force that directs students to carry out learning activities seriously (Utami et al., 2024). Learning motivation is the overall driving force that gives rise to, ensures continuity, and directs learning activities so that learning objectives can be achieved (Fernando et al., 2024). Students who have high motivation tend to show perseverance, curiosity, and enthusiasm in completing tasks, so they have the opportunity to achieve better learning outcomes than students who have low motivation (Wahyuni et al., 2025).

The problem of low learning motivation was also found in mathematics learning in grade IV of SDN 05 Pasaman. Based on the results of the Daily Assessment of the 2025/2026 Academic Year, it was found that out of 22 students, only 6 students (27%) achieved the Learning Objectives Achievement Criteria (KKTP), while 16 students (72%) had not achieved perfection with a class average of 65. In addition, the results of the reflection on learning motivation showed that 64% of students were in the low motivation category, 27% in the medium category, and only 9% had high motivation. The results of observations during learning showed that most students were less active in participating in learning, were reluctant to ask or express opinions, gave up easily when faced with questions that were considered difficult, and still considered mathematics as a difficult subject to understand. This condition indicates that the learning implemented has not been fully able to facilitate the characteristics and learning needs of students.

The characteristics of elementary school students, especially fourth-grade students, indicate that they are at the concrete operational stage, making it easier for them to understand concepts through hands-on activities, group collaboration, educational games, and enjoyable learning experiences. Fourth-grade students

tend to be motorically active, enjoy working in small groups, and are influenced by interactions with peers. Elementary school students prefer learning activities involving games, concrete activities, and collaboration rather than one-way learning. Therefore, a learning model is needed that can accommodate these characteristics so that students can learn actively, be motivated, and gain more meaningful learning experiences (Hafni et al., 2025).

One learning model that is considered appropriate to the characteristics of elementary school students is the Teams Games Tournament (TGT) cooperative learning model. This model integrates group collaboration with academic games and tournaments, creating an active, fun, and healthy competitive learning atmosphere (Izzaturrahman et al., 2025). Through group discussion activities, students help each other understand the material, exchange opinions, and solve problems together, while through games and tournaments students are encouraged to improve their conceptual understanding so that they can make the best contribution to their group (Sundari et al., 2025). The TGT model is also in line with Piaget's cognitive development theory which states that elementary school-aged students are at the concrete operational stage so they need real, collaborative, and interactive activities in building conceptual understanding (Arman et al., 2026).

In addition to being in accordance with the characteristics of student development, the TGT model also supports the implementation of the Independent Curriculum because it provides space for students to develop their skills in collaboration, communication, responsibility, sportsmanship, and independent learning. Learning through TGT allows students to actively participate in every stage of learning, making the learning process more interesting and increasing learning motivation (Nisa et al., 2024). By increasing learning motivation, students are expected to be more diligent, confident, and able to achieve more optimal learning outcomes. Various previous studies have proven the effectiveness of the TGT model in mathematics learning. The application of the TGT model has a significant impact on improving motivation and mathematics learning outcomes compared to conventional learning (Nugraha & Subroto, 2020).

Research by Handayani et al. (2025) also shows that the TGT model can significantly increase the motivation of elementary school students to learn mathematics. Furthermore, Nurulhuda et al. (2024) found that the application of the TGT model can improve learning activities and understanding of elementary school students' mathematical concepts. However, most of these studies use an experimental approach and focus more on the influence of the model on learning outcomes (Abdurrahman et al., 2025). Research examining the application of the TGT model through Classroom Action Research (CAR) to improve motivation and mathematics learning outcomes in the context of implementing the Independent Curriculum is still relatively limited, especially for fourth-grade elementary school students (Putri et al., 2023).

Based on the description, there is a gap between the ideal conditions of mathematics learning expected in the Independent Curriculum and the actual

conditions in Grade IV of SDN 05 Pasaman, which indicate low student motivation and learning outcomes. Therefore, efforts are needed to improve learning through the implementation of the Teams Games Tournament (TGT) cooperative learning model that is able to create active, collaborative, and enjoyable learning. This study aims to improve learning motivation and mathematics learning outcomes of Grade IV students of SDN 05 Pasaman through the implementation of the Teams Games Tournament (TGT) cooperative learning model. The results of this study are expected to contribute to the development of alternative learning models for improving mathematics learning in elementary schools.

2. Methodology

This study uses a Classroom Action Research (CAR) approach with the Kemmis and McTaggart model consisting of four stages, namely planning, implementation, observation, and reflection (Machali, 2022). The research was conducted in cycles, where the results of reflection in each cycle were used as a basis for improving actions in the next cycle. This study aims to improve student learning motivation and mathematics learning outcomes through the implementation of the Teams Games Tournament (TGT) cooperative learning model. This research was conducted at SD Negeri 05 Pasaman, Pasaman District, West Pasaman Regency in the second semester of the 2025/2026 academic year. The research subjects were 22 fourth-grade students, consisting of 10 male students and 12 female students. The selection of subjects was based on the results of initial observations which showed that student learning motivation and mathematics learning outcomes were still low. Based on the results of the Daily Assessment, only 6 students (27%) achieved the Learning Objective Achievement Criteria (KKTP), while 16 students (72%) had not achieved completion. Furthermore, the results of the initial reflection showed that most students were in the low learning motivation category.

This research was conducted in two cycles, with each cycle including the planning stage, action implementation, observation, and reflection. In the planning stage, the researcher developed learning tools in the form of learning modules adapted to the syntax of the Teams Games Tournament (TGT) cooperative learning model, prepared learning materials, Student Worksheets (LKPD), *game* and *tournament questions*, learning media, observation instruments, learning motivation questionnaires, and learning outcome tests. The action implementation stage was carried out by applying the Teams Games Tournament (TGT) cooperative learning model in accordance with the learning syntax.

The teacher began the learning process through apperception activities and conveying learning objectives, then presented mathematics materials to students. Next, students were divided into heterogeneous groups to conduct discussions, complete LKPD, take part in academic games (*games*), and participate in *tournament activities*. At the end of the learning, the teacher awarded the best

group, conducted reflections with students, gave evaluation tests, and provided feedback on the learning process that had taken place.

The observation phase is carried out simultaneously with the implementation of the action. Observers observe the implementation of learning, teacher activities, and student activities during the learning process using a prepared observation sheet. Observations were conducted during the learning process to obtain data on teacher and student activities during the implementation of the TGT cooperative learning model. Observation data were analyzed descriptively in the form of percentages to compare teacher and student activities in Cycle I and Cycle II. Furthermore, in the reflection stage, researchers and observers analyzed the observation results, the results of the learning motivation questionnaire, and the results of the learning test to evaluate the success of the action and determine improvements needed in the next cycle.

Data collection techniques used included observation, tests, and questionnaires. Observations were used to obtain data on teacher and student activities during the implementation of the TGT cooperative learning model. Tests were given at the end of each cycle to measure student achievement in mathematics learning outcomes (Nurmawati, 2024). Meanwhile, questionnaires were used to obtain data on student learning motivation using a Likert scale.

The research instruments consisted of observation sheets, a learning motivation questionnaire, and a learning achievement test. The observation sheets were used to assess teacher and student activities during the learning process. The learning motivation questionnaire was structured as a closed-ended questionnaire using a Likert scale to measure student learning motivation indicators. The learning achievement test was structured based on the mathematics learning achievement indicators taught in each cycle.

3. Results and Discussion

The Team Games Tournament (TGT) model was implemented in two cycles following the planned learning activities. In each cycle, the teacher began the lesson by conducting an apperception and conveying the learning objectives, followed by a presentation of the mathematics material. Students were then divided into heterogeneous teams to discuss the material and complete the provided worksheets (LKPD). After the group discussions, students participated in games and academic tournaments as part of the TGT learning process. At the end of the learning activities, the teacher awarded the best-performing team, conducted reflections with students, and provided feedback on the learning process. The implementation of these activities was observed to evaluate teacher and student activities during the TGT model implementation. The initial conditions of students' learning outcomes and learning motivation before implementing the TGT model are presented in Table 1.

Table 1. Initial Research Conditions

Variables	Initial Conditions	Solution/Category	KKTP Score	Average
Learning outcomes	6 out of 22 students (27%)	16 of 22 students (72%) have not completed	75	65
Motivation to learn	9% high category	27% medium category; 64% low category	-	-

Based on Table 1, the initial conditions show that only 6 out of 22 students (27%) achieved KKTP 75, while 16 students (72%) had not achieved completeness with an average score of 65. In terms of learning motivation, 64% of students were in the low category, 27% in the medium category, and 9% in the high category. The initial condition data became the basis for comparing the changes that occurred after the implementation of the TGT model in Cycle I and Cycle II. The results of students' learning outcomes and learning completion in each cycle are presented in Table 2.

Table 2. Recapitulation of Teacher Activities and Student Activities

Variables	Cycle I	Category	Cycle II	Category	Improvement
Teacher Activities	81%	Good	92%	Very good	+11%
Student Activities	77%	Fair	89%	Good	+12%

Based on Table 2, it can be seen that teacher activity increased from 81% in Cycle I to 92% in Cycle II. This increase indicates that teachers are increasingly able to optimally apply the syntax of the Team Game Tournament (TGT) model. The increase in student activity from 77% in Cycle I to 89% in Cycle II indicates an overall improvement in student participation during the learning process. However, the available observational data were analyzed in aggregate and did not provide separate percentages for each activity indicator. Therefore, the findings are interpreted based on overall student activity scores, not individual indicators. Improvements in action in Cycle II made the learning process more effective and conducive. Documentation of the implementation of the Team Game Tournament (TGT) learning model during Cycle II is presented in Figure 1. Learning activities include group discussions, academic games, and tournaments as part of the application of the TGT syntax.



Figure 1. Documentation of the implementation of TGT instructions in Cycle II

This documentation illustrates student engagement in group activities and academic games during the implementation of the TGT model. These activities provided students with opportunities to collaborate, engage in discussions, and actively participate in the learning process. The changes in teacher and student activities during the implementation of TGT are presented in Table 3.

Table 3. Summary of Student Learning Outcomes

Cycle	Average	Completeness	Percentage of Completion
I	70	12 students	55%
II	85	20 students	91%

Table 3 shows that student learning outcomes improved from Cycle I to Cycle II. In Cycle I, only 12 students (55%) achieved learning completion with an average score of 70. After learning improvements were made in Cycle II, the number of students who completed the learning increased to 20 students (91%) with an average score of 85. These results indicate that the research success indicator has been achieved because the classical completion exceeded the target of 80%. The changes in students' learning motivation across the two cycles are presented in Table 4.

Table 4. Summary of Student Learning Motivation

Indicator	Cycle I	Cycle II
Interest and attention	77%	94%
Spirit	81%	93%
Responsibility	77%	93%
Reaction to teachers	80%	92%
Feeling happy and satisfied	82%	95%
Average	79%	93%

Based on Table 4, all learning motivation indicators increased in Cycle II. The highest increase occurred in the happiness and satisfaction indicators, while all other indicators also reached the excellent category. The average learning motivation increased from 79% in Cycle I to 93% in Cycle II. These results indicate that the Team Game Tournament (TGT) model is able to increase student interest, enthusiasm, responsibility, and engagement in the learning process. A comparison of students' mathematics learning outcomes between Cycle I and Cycle II is presented in Table 5.

Table 5. Recapitulation of Research Improvement

Variables	Cycle I	Cycle II	Improvement
Teacher Activities	81%	92%	+11%
Student Activities	77%	89%	+12%
Motivation to learn	79%	93%	+14%
Learning outcomes	70	85	+15
Learning Completion	55%	91%	+36%

Table 5 shows that all research variables improved in Cycle II. Average learning outcomes increased from 70 to 85, while the learning completion rate increased from 55% to 91%. Learning motivation increased from 79% to 93%, while

teacher and student activity increased from 81% to 92% and from 77% to 89%, respectively.

Discussion

The results of the study indicate that the implementation of the Team Games Tournament (TGT) cooperative learning model was able to increase teacher activity, student activity, learning motivation, and learning outcomes of fourth-grade students at SDN 05 Pasaman. The improvements that occurred in each cycle indicate that the more optimal the implementation of TGT syntax, the higher the student engagement in learning. The increase in teacher activity from 81% in Cycle I to 92% in Cycle II indicates an overall improvement in the implementation of the learning process. Because the available observation data were recorded as aggregate scores, this increase is interpreted as an overall change in teacher activity and not as an increase in a specific TGT syntax indicator. The increase in student activity from 77% in Cycle I to 89% in Cycle II indicates an increase in student engagement during the learning process. Based on the available aggregate observation data, the learning process in Cycle II was more active than in Cycle I.

The increase in learning motivation from 79% to 93% indicates that game-based learning and competition can create a fun learning atmosphere. The presence of group rewards encourages students to participate actively, take responsibility for the group, and have a higher enthusiasm in learning. The improvement in learning outcomes is also evident from the average score of 70 in Cycle I to 85 in Cycle II, while the completeness of learning increased from 55% to 91%. Thus, the available data shows an increase in motivation and learning outcomes after the intervention was implemented. During the group discussion stage, students help each other understand the material, while during the game and tournament stages, students have the opportunity to strengthen their understanding through fun academic competitions. This process makes students more active in building knowledge, resulting in improved learning outcomes.

The findings of this study are in line with research stating that the Team Games Tournament (TGT) model is able to improve learning motivation and student learning outcomes through a combination of group collaboration, educational games, academic competitions, and group awards (Devi & Tahir, 2025). Overall, increased learning motivation followed by increased learning outcomes indicates a positive relationship between the two variables. The higher the student's learning motivation, the higher the learning outcomes obtained. Thus, the Team Games Tournament (TGT) learning model is proven effective in improving learning motivation and mathematics learning outcomes of fourth-grade students at SDN 05 Pasaman.

4. Conclusion

Based on the results of classroom action research conducted in two cycles, the implementation of the Team Games Tournament (TGT) cooperative learning

model successfully improved the learning motivation and mathematics learning outcomes of fourth-grade students at SDN 05 Pasaman. The implementation of TGT encouraged students to participate more actively in the learning process through group activities, academic games, and tournaments. The learning process also provided opportunities for students to work together, take responsibility, and engage in a more enjoyable learning environment. The improvements observed throughout the study indicate that TGT can support better student engagement, learning motivation, and mathematics learning outcomes. Therefore, the Team Games Tournament model can be used as an alternative learning model for mathematics teaching at the elementary school level, particularly to create active, collaborative, enjoyable, and interactive learning experiences. The successful implementation also shows that the use of cooperative activities combined with academic games and tournaments can provide meaningful learning experiences for elementary school students.

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