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Application of the Teams Games Tournament Cooperative Learning Model to Improve Mathematics Learning Outcomes of Grade V Students at UPTD SD Negeri 136 Barru

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Abstract

Low mathematics achievement among Grade V students at UPTD SD Negeri 136 Barru was associated with limited classroom participation, textbook-dominated instruction, infrequent collaborative activities, and low learning motivation. This study aimed to examine the implementation of the Teams Games Tournament (TGT) cooperative learning model and its effectiveness in improving the mathematics learning process and student achievement. Classroom action research employing a mixed-methods approach was conducted with one teacher and 21 students. Data were collected through observation, achievement tests, and documentation and analyzed using qualitative and quantitative descriptive techniques, including data condensation, data display, and conclusion drawing. The intervention was considered successful when teacher and student learning activities reached the Good (B) category and at least 76% of students achieved learning mastery. The findings showed that teacher and student activities improved from the Fair (C) category in Cycle I to the Good (B) category in Cycle II. The proportion of students achieving mastery also increased from 62% in Cycle I to 80% in Cycle II. These

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findings demonstrate that the TGT cooperative learning model effectively improved both the instructional process and mathematics learning outcomes of Grade V students. The study provides practical evidence that structured team-based competition can promote active participation, collaborative learning, and improved mathematics achievement in primary education.

Keywords: Classroom Action Research; Cooperative Learning; Mathematics Achievement; Primary Education; Teams Games Tournament

INTRODUCTION

Learning is an essential part of the educational process because it enables students to acquire knowledge, skills, and meaningful learning experiences. Effective learning does not focus solely on delivering content. It should also create an active and enjoyable environment and provide opportunities for students to participate directly in the learning process. This principle aligns with Regulation of the Minister of Primary and Secondary Education Number 13 of 2025, which emphasizes deep, meaningful, and enjoyable learning so that students can develop according to their learning needs. Similarly, Widayati (2022) stated that the Merdeka Curriculum was designed to provide meaningful and enjoyable learning experiences for both teachers and students.

Mathematics is one of the subjects that plays an important role in developing students' thinking abilities. According to Tambunan (2025), mathematics is the study of patterns, structures, relationships, and change through logical and systematic reasoning. Mathematics instruction is not only intended to help students understand concepts, but also to develop critical and logical thinking and the ability to solve various problems. Therefore, mathematics should be taught through activities that actively engage students in understanding concepts and applying their knowledge.

In practice, however, mathematics instruction in elementary schools still faces various problems that contribute to low student learning outcomes. Manapa and Mautang (2024) stated that the use of an unsuitable learning model can make instruction less engaging and consequently affect student learning outcomes. Teachers must therefore select learning models that match the characteristics of the students and the content being taught so that learning can proceed effectively (Wiryanto, 2020).

An interview with the Grade V homeroom teacher at UPTD SD Negeri 136 Barru indicated that mathematics instruction continued to face several challenges. The teacher reported that some students had difficulty understanding mathematical concepts, participated insufficiently during lessons, and lacked confidence when expressing opinions or answering questions.

These findings were reinforced by classroom observations showing that instruction was still dominated by the use of mathematics textbooks. Learning activities mainly centered on explanations and practice exercises, which limited interaction between the teacher and students and among students. Group discussions and other activities designed to promote active student engagement were also rarely conducted.

The findings were further supported by a review of instructional documents, particularly the results of a mathematics daily test. Of the 21 students, only 8 obtained scores of at least 75 and met the Learning Objective Achievement Criteria (KKTP), while the remaining 13 scored below the KKTP. These data showed that class-wide learning mastery had not yet been achieved.

The low level of achievement indicated that students' mathematics learning outcomes still needed improvement. According to Novitasari (2023), learning outcomes are the final competencies acquired by students after completing a learning process. Therefore, the low learning outcomes demonstrated that the instruction provided had not yet produced the expected results.

The students' low mathematics learning outcomes were influenced by factors related to both the teacher and the students. From the teacher's perspective, explanations of the material were not yet optimal, small learning groups were rarely formed, and academic games, intergroup tournaments, and rewards for high-performing groups had not been implemented effectively. These conditions limited students' opportunities to participate actively in the learning process.

From the students' perspective, several difficulties remained during instruction. Some students did not understand the material, participated insufficiently, showed limited enthusiasm, had low learning motivation, and lacked encouragement to improve their achievement. These conditions weakened their understanding of mathematical concepts, and some students did not meet the Learning Objective Achievement Criteria (KKTP).

These problems required the implementation of a learning model that could increase student engagement. One suitable model is the Teams Games Tournament (TGT) cooperative learning model. Solihat and Sutirna (2023) stated that TGT can improve mathematics learning outcomes because it allows students to learn through group activities, games, and academic competition. The model also encourages students to cooperate, assume responsibility, and participate actively in understanding the learning material.

The effectiveness of the Teams Games Tournament (TGT) model in improving mathematics learning outcomes has been demonstrated in several previous studies. Usman et al. (2023) found that applying TGT to Grade V students improved the learning process and outcomes through class presentation, team study, games, tournaments, and team recognition. Qona'ah et al. (2025) also showed that TGT effectively improved mathematics learning outcomes by creating active and enjoyable instruction that directly involved students in group activities, games, and academic tournaments. Putra and Rohman (2023) similarly reported that TGT improved the mathematics learning outcomes of Grade V students through teamwork and academic tournaments that encouraged more active engagement with the material.

Handayani et al. (2025) found that the TGT model increased student engagement in mathematics by strengthening group discussion, interaction among students, and learning motivation. Banjarnahor and Siregar (2025) likewise showed that TGT improved mathematics mastery through learning activities involving teamwork, games, and tournaments, which increased student enthusiasm. Consistent with these findings, Wiranti (2019) concluded that TGT improved both the quality of the learning process and mathematics learning outcomes by enabling students to participate actively in groups, games, and academic tournaments that promoted cooperation, interaction, responsibility, and motivation.

This study aimed to describe the implementation of the Teams Games Tournament (TGT) cooperative learning model in improving the mathematics learning process and outcomes of Grade V students at UPTD SD Negeri 136 Barru. The study was also expected to help elementary school teachers select and implement learning models that increase student engagement. Therefore, the findings may benefit not only UPTD SD Negeri 136 Barru, but also other schools facing similar problems in improving students' mathematics learning outcomes.

METHODS

This study used a mixed-methods approach that combined qualitative and quantitative methods. The qualitative approach was used to observe teacher and student activities during instruction, while the quantitative approach was used to measure learning outcomes through evaluation tests. The study employed classroom action research conducted in two continuous cycles, with the reflection from Cycle I serving as the basis for improvements in Cycle II. The action-research procedure is presented below:

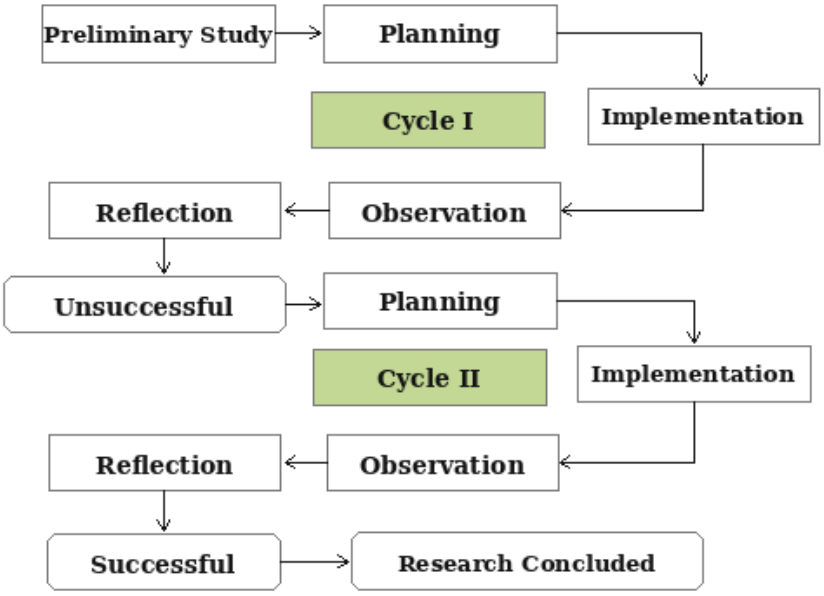

Figure 1. Kemmis and Taggart Classroom Action Research Procedure
Source: Adapted from Jusrianti et al. (2021).

The participants were the teacher and Grade V students at UPTD SD Negeri 136 Barru. The study involved 22 participants, consisting of one teacher who implemented the instructional actions and 21 students who received the actions. The student group comprised 10 boys and 11 girls. The study was conducted during the second semester of the 2025/2026 academic year.

The study was implemented in cycles consisting of planning, action, observation, and reflection, with each cycle providing the basis for improvement in the next cycle. Data were collected through observation, questionnaires, and documentation. The research instruments consisted of observation sheets, test sheets, and documentation. The data were then analyzed through data condensation, data display, conclusion drawing, and verification to produce valid findings.

The learning process was considered successful when the stages of the Teams Games Tournament (TGT) cooperative learning model were implemented effectively.

Table 1. Success Criteria

Success Level	Qualification
76% - 100 %	Good (B)
60% - 75%	Fair (C)
0% - 59%	Poor (K)

Source: Adapted from Vikiantika et al. (2022)

RESULTS

Research Results

This section describes the implementation of the learning process and the mathematics learning outcomes of Grade V students at UPTD SD Negeri 136 Barru after the Teams Games Tournament (TGT) cooperative learning model was applied. The study was conducted in two cycles, each consisting of two meetings. Every cycle included four stages: planning, implementation, observation, and reflection. The results of Cycle I are presented below.

1. Cycle I Data Presentation

The mathematics learning activities of Grade V students at UPTD SD Negeri 136 Barru in Cycle I consisted of planning, implementation, observation, and reflection. Each stage is described below.

a. Cycle I Planning

During the planning stage, the researcher worked with the Grade V teacher, who served as the observer, to prepare all instructional requirements for implementing the Teams Games Tournament (TGT) cooperative learning model. The activities included analyzing the curriculum, preparing the teaching module, developing instructional materials on data collection, preparing Group Worksheets (LKK), Question Cards, learning media, teacher and student observation instruments, evaluation questions, and documentation equipment. These materials were prepared to ensure that the actions were implemented in accordance with the study objectives.

b. Implementation of Cycle I

The actions in Cycle I were conducted in two meetings. The first meeting was held on Monday, April 27, 2026, and the second on Thursday, April 30, 2026.

1) Meeting 1

a) Preliminary Activities

The preliminary activities lasted approximately 10 minutes. The teacher opened the lesson with a greeting, invited the students to pray, checked attendance, and conducted an energizing clap as an ice-breaking activity to increase learning motivation. The teacher then provided an apperception activity, stated the learning objectives, and explained that the topic was data collection.

b) Main Activities

The main activities lasted approximately 50 minutes and applied the first three stages of the Teams Games Tournament (TGT) cooperative learning model: Class Presentation, Teams, and Games.

During the Class Presentation stage, the teacher explained data collection using PowerPoint. The teacher conducted a question-and-answer session to identify students' prior understanding and then introduced the Group Worksheet (LKK) and the rules for using the Question Cards during the lesson.

During the Teams stage, the teacher divided the students into four groups. Each group completed an LKK on simple data collection according to the instructions. The students discussed the tasks, exchanged ideas, and worked together to complete the group assignment.

During the Games stage, the teacher distributed Question Cards containing questions about data collection. Each group took turns selecting a card. A group received points for a correct answer. When a group could not answer, the question was transferred to another group so that all students remained involved in the game.

c) Closing Activities

The closing activities lasted approximately 10 minutes. The teacher gave students an opportunity to ask questions about material they had not understood. The teacher and students then summarized the lesson, conducted a brief reflection, reinforced learning motivation, explained the activities for the next meeting, and closed the lesson with a prayer.

2) Meeting 2

a) Preliminary Activities

The teacher opened the lesson with a greeting and a prayer, checked attendance, conducted an ice-breaking activity, and invited the students to recall the data-collection

material learned in the previous meeting. The teacher also explained that the lesson would continue with the Tournament and Team Recognition stages.

b) Main Activities

The main activities in the second meeting applied the two remaining stages of the Teams Games Tournament (TGT) cooperative learning model: Tournament and Team Recognition.

During the Tournament stage, the teacher prepared the My Friend 100 game board using Canva, explained the rules, and conducted an intergroup tournament through preliminary and final rounds. Each group answered questions in turn to earn points. The group with the highest score was declared the winner.

During the Team Recognition stage, the teacher calculated the total scores obtained by each group during the games and tournament. The teacher announced the best group, presented an award to the winning group, and gave appreciation and motivation to all students so that they would remain enthusiastic about learning.

c) Closing Activities

At the end of the lesson, the teacher and students summarized the data-collection material. The teacher then administered an evaluation test to measure students' learning outcomes in Cycle I. The lesson ended with motivation, a prayer, and a closing greeting.

c. Observation of Cycle I Actions

1) Teacher Aspect

Based on the observation of teacher activities during Cycle I, the teacher obtained a score of 33 out of a maximum of 45, or 73%, which was classified as Fair (C). The result indicated that instruction had followed the stages of the Teams Games Tournament (TGT) cooperative learning model, but had not yet been implemented optimally.

During Class Presentation, the teacher explained the data-collection material well, but two-way interaction between the teacher and students remained limited, so only some students responded actively. During Teams, the teacher formed groups and directed students to complete the LKK, but the groups were not yet heterogeneous. During Games, the teacher used Question Cards and awarded points to groups that answered correctly, but classroom management still needed improvement. During Tournament, the teacher conducted the intergroup competition, but student participation was uneven and sportsmanship was not fully maintained. During Team Recognition, the teacher announced

the winning group, but appreciation and motivation for all students were still insufficient. The teacher-observation results are presented in the following table.

Table 2. Teacher Observation Results in Cycle I

TGT Model Stages	Number of Indicators	Score Obtained
Class Presentation	3	7
Team Study (Teams)	3	8
Games	3	8
Tournament	3	6
Team Recognition	3	7
Total	15	33
Maximum Total Score	45	
Percentage	73%	
Category	Fair (C)	

$$Achievement\ Percentage\ = \frac{Score\ Obtained}{Maximum\ Score} \times 100\%$$

2. Student Aspect

The observation of students' learning activities during Cycle I produced a score of 233 out of a maximum of 315, or 74%, which was classified as Fair (C). The result showed that student engagement had begun to develop, but had not yet reached the established success criterion.

During Class Presentation, some students paid attention to the teacher's explanation, but several students did not actively ask or answer questions. During Teams, students worked together, but participation in discussion and completion of the LKK was uneven. During Games, most students showed enthusiasm, although some were still reluctant to answer questions. During Tournament, only a few students participated actively, while others lacked confidence. During Team Recognition, students accepted the results appropriately, but the learning motivation of some students still needed improvement. The student-observation results are presented in the following table.

Table 3. Student Observation Results in Cycle I

TGT Model Stages	Student Activity Category		
	Good (B)	Fair (C)	Poor (K)
Class Presentation	4	13	4
Team Study (Teams)	6	8	7
Games	12	6	3
Tournament	6	15	-
Team Recognition	7	10	4
Total	35	52	18
Total Score Obtained	233		
Maximum Total Score	315		
Percentage	74%		
Category	Fair (C)		

3. Analysis of Learning Outcome Data in Cycle I

The success of the actions in Cycle I was measured through a learning-outcome evaluation test administered at the end of the lesson. Students who obtained a score of at least 75 were classified as having achieved mastery, while those who scored below 75 were classified as not having achieved mastery.

The evaluation results showed that 13 of the 21 students achieved mastery, producing a mastery percentage of 62%, while the remaining 8 students did not achieve mastery. The class average was 76. These results showed that class-wide mastery had not met the study's success criterion, which required at least 76% of students to achieve mastery. Therefore, the Cycle I actions were not considered successful and improvements were required in Cycle II. The percentages of students who achieved and did not achieve mastery in Cycle I are presented below.

Table 4. Percentage of Students Who Achieved and Did Not Achieve Mastery in Cycle I

Description	Frequency	Percentage
Students who achieved mastery	13	62%
Students who did not achieve mastery	8	38%
Total	21	100%

d. Cycle I Reflection

The Cycle I reflection was conducted through a discussion between the researcher and the observer, with reference to the observations of teacher activities, students' learning processes, and student evaluation results. The reflection identified several weaknesses that needed to be addressed in the next cycle.

1) Teacher's Instructional Process

a) The teacher explained the material and used PowerPoint to support instruction, but two-way interaction with the students still needed improvement.

b) The teacher formed learning groups, but the groups were not heterogeneous, so student ability was not evenly distributed across the groups.

c) The teacher implemented a game using Question Cards, but classroom management during the game remained weak and the learning environment was not fully conducive.

d) During the Tournament stage, the teacher had not yet ensured that all students participated actively and maintained sportsmanship throughout the competition.

e) The teacher presented an award to the winning group, but appreciation and motivation for all students still needed improvement to encourage every student's enthusiasm for learning.

2) Students' Learning Process

a) Some students were still insufficiently active during Class Presentation and were reluctant to express opinions or answer the teacher's questions.

b) Cooperation within the groups had begun to develop, but the involvement of all group members in completing the LKK was still uneven.

c) During the games and tournament, several students lacked confidence and were reluctant to answer the questions provided.

d) Some students were not yet accustomed to the stages of the Teams Games Tournament (TGT) cooperative learning model, so their participation in each activity was not optimal.

e) During Team Recognition, most students accepted the competition results appropriately, but several students still did not demonstrate optimal learning motivation after the recognition activity.

2. Cycle II Data Presentation

a. Planning of Cycle II Actions

The Cycle II plan was designed to address the obstacles encountered in Cycle I so that instruction could be implemented optimally and students' motivation and learning participation could improve.

b. Implementation of Cycle II Actions

The actions in Cycle II were conducted in two meetings. The first meeting was held on Monday, May 4, 2026, and the second on Thursday, May 7, 2026.

1) Meeting 1

a) Preliminary Activities

The preliminary activities lasted approximately 10 minutes. The teacher opened the lesson with a greeting, invited the students to pray under the leadership of the class leader, and checked attendance. The teacher then conducted an energizing clap as an ice-breaking activity to create a more enjoyable learning environment. Afterward, the teacher provided an apperception activity, explained the learning objectives, and motivated the students to participate actively. The teacher stated that the topic for the meeting was presenting collected data in a frequency table.

b) Main Activities

The main activities lasted approximately 50 minutes and applied the first three stages of the Teams Games Tournament (TGT) cooperative learning model: Class Presentation, Teams, and Games.

During Class Presentation, the teacher explained how to present collected data using PowerPoint. The teacher conducted a question-and-answer session to identify students' prior understanding and reinforce the material. The teacher then introduced the Group Worksheet (LKK) and the rules for using the Question Cards during instruction.

During Teams, the teacher divided the students into four academically heterogeneous groups. Each group completed an LKK on presenting collected data in a simple frequency table. The students discussed the material, exchanged ideas, cooperated, and helped one another understand the content and complete the group assignment.

During Games, the teacher distributed Question Cards containing questions about presenting collected data. Each group took turns selecting a question card and discussing the answer. A group that answered correctly received points. When a group could not answer,

the question was transferred to another group so that all students remained actively involved in the game.

c) Closing Activities

During the closing activities, the teacher gave students an opportunity to ask questions about material they had not understood. The teacher and students then summarized the presentation of collected data and conducted a brief reflection on the lesson. The teacher also asked several questions as feedback to assess student understanding and explained the activities planned for the next meeting. The lesson ended with motivation, a prayer, and a closing greeting.

2) Meeting 2

a) Preliminary Activities

The teacher began the preliminary activities with a greeting, invited the students to pray, and checked attendance. The teacher then conducted an ice-breaking activity to increase student enthusiasm. Next, the teacher invited the students to recall the material from the previous meeting and explained that instruction would continue with the Tournament and Team Recognition stages.

b) Main Activities

The main activities in the second meeting applied the two remaining stages of the Teams Games Tournament (TGT) cooperative learning model: Tournament and Team Recognition.

During Tournament, the teacher prepared the My Friend 100 game board in Canva, explained the rules, and determined the order in which the groups would compete. The tournament consisted of preliminary and final rounds. Each group took turns answering questions about presenting collected data. A group that made three mistakes lost its opportunity to answer, and the question was transferred to the opposing group. A group that identified an unrevealed answer received all the points assigned to that question.

During Team Recognition, the teacher calculated the total scores obtained by each group in the games and tournament. Based on the scores, the teacher announced the best group and presented an award to recognize the group's cooperation and effort. The teacher also motivated all students to maintain their enthusiasm for learning and continue strengthening cooperation and confidence during instruction.

c) Closing Activities

During the closing activities, the teacher and students summarized the material on presenting collected data. The teacher then administered the Cycle II evaluation test to measure student learning outcomes after the complete instructional sequence. Before ending the lesson, the teacher motivated the students to sustain their enthusiasm and maintain the cooperation developed during the activities. The lesson ended with a prayer and a closing greeting.

c. Observation of Cycle II Actions

The results of the observations of teacher and student activities during the implementation of Cycle II are presented below.

a. Teacher Aspect

Based on the observation of teacher activities during Cycle II, the teacher obtained a score of 44 out of a maximum of 45, or 98%, which was classified as Good (B). The result showed that instruction followed the stages of the Teams Games Tournament (TGT) cooperative learning model and met the established success criterion.

During Class Presentation, the teacher explained how to present collected data using PowerPoint, explained the LKK, and established optimal two-way interaction with the students. During Teams, the teacher formed heterogeneous groups, directed students to cooperate, and guided each group while it completed the LKK. During Games, the teacher implemented the Question Cards activity in an orderly manner, allowing all students to participate appropriately. During Tournament, the teacher conducted the intergroup competition according to the rules and ensured active participation by all students. Nevertheless, minor rule violations still occurred, so the sportsmanship indicator was rated Fair (C). During Team Recognition, the teacher calculated each group's score, announced the winning group, presented an award to the best group, and gave appreciation and motivation to all students. The teacher-observation results are shown in the following table.

Table 5. Teacher Observation Results in Cycle II

TGT Model Stages	Number of Indicators	Score Obtained
Class Presentation	3	9
Team Study (Teams)	3	9
Games	3	9
Tournament	3	8
Team Recognition	3	9

TGT Model Stages	Number of Indicators	Score Obtained
Total	15	44
Maximum Total Score	45	
Percentage	98%	
Category	Good (B)	

2) Student Aspect

The observation of students' learning activities during Cycle II produced a score of 293 out of a maximum of 315, or 93%, which was classified as Good (B). The result showed that the students' learning process improved compared with the previous cycle and met the established success criterion.

During Class Presentation, most students paid attention to the teacher's explanation, asked questions actively, and responded to the material. During Teams, students cooperated effectively, engaged actively in discussion, and helped one another complete the LKK. During Games, nearly all students showed high enthusiasm, answered questions confidently, and participated actively. During Tournament, students participated enthusiastically, showed confidence in answering questions, and cooperated to earn points for their groups. During Team Recognition, all students accepted the results with sportsmanship, appreciated the winning group, and demonstrated stronger motivation. The student-observation results are shown in the following table.

Table 6. Student Observation Results in Cycle II

TGT Model Stages	Student Activity Category		
	Good (B)	Fair (C)	Poor (K)
Class Presentation	14	7	-
Team Study (Teams)	14	7	-
Games	19	2	-
Tournament	15	6	-
Team Recognition	21	-	-
Total	83	22	-
Total Score Obtained	293		
Maximum Total Score	315		
Percentage	93%		
Category	Fair (C)		

2) Analysis of Students' Mathematics Learning Outcomes in Cycle II

The success of the actions in Cycle II was measured through a learning-outcome evaluation test administered at the end of instruction. Students who obtained a score of at least 75 were classified as having achieved mastery, while those who scored below 75 were classified as not having achieved mastery. The evaluation results showed that 18 of the 21 students (80%) achieved mastery, while 3 students (20%) did not. The class average was 82.

These results showed that student mastery met the study's success criterion because class-wide mastery exceeded 76%. Therefore, the Teams Games Tournament (TGT) cooperative learning model improved students' mathematics learning outcomes on the topic of presenting collected data.

Table 7. Percentage of Students Who Achieved and Did Not Achieve Mastery in Cycle II

Description	Frequency	Percentage
Students who achieved mastery	18	80%
Students who did not achieve mastery	3	20%
Total	21	100%

A comparison of mathematics learning outcomes is presented in the following table.

Table 8. Comparison of Mathematics Learning Outcomes in Cycles I and II

Description	Cycle I		Cycle II	
	F	%	F	%
Achieved Mastery	13	62%	18	80%
Did Not Achieve Mastery	8	38%	3	20%
Total	21	100%	21	100%

d. Cycle II Reflection

The implementation of instruction in Cycle II showed greater improvement than in the previous cycle. This improvement was reflected in the observations of teacher and student activities from Cycle I to Cycle II. The implementation of instruction by the teacher increased from 74% in Cycle I to 98% in Cycle II. Student activities likewise increased from 73.3% to 93%. Overall, the Teams Games Tournament cooperative learning model was implemented effectively and achieved the Good category, producing a positive effect on students' mathematics learning outcomes.

1) Teacher's Instructional Process

a) Instruction using the Teams Games Tournament (TGT) model improved in Cycle II compared with Cycle I. The teacher implemented all TGT stages according to the plan,

including content presentation, group formation, games using Question Cards, the My Friend 100 tournament, and team recognition. This improvement showed that the teacher was increasingly able to manage instruction systematically and in accordance with the stages of the model.

b) The teacher provided more effective guidance during the learning activities. In Cycle II, the teacher gave clearer directions about the game rules and tournament procedures, which helped students understand the activities. The teacher also provided more active support to each group, ensured that all members participated, and assisted students who had difficulty understanding the data-collection material.

c) The teacher created a more interactive and enjoyable learning environment. Through games and tournaments, the teacher developed conditions that encouraged students to participate more actively. Motivation and reinforcement during the activities also increased students' confidence in discussing ideas, answering questions, and completing the assigned challenges.

2) Students' Learning Process

Overall, student activities in Cycle II improved compared with Cycle I. Students were more active and enthusiastic when learning through the Teams Games Tournament (TGT) model. They became accustomed to cooperating in groups, helping one another understand the material, and participating in games and tournaments.

DISCUSSION

1. Implementation of the Teams Games Tournament Cooperative Learning Model to Improve Students' Mathematics Learning Process

The implementation of the Teams Games Tournament (TGT) cooperative learning model in Grade V mathematics at UPTD SD Negeri 136 Barru improved the learning process from Cycle I to Cycle II. The study was conducted in two cycles and was concluded after Cycle II because the established success criterion had been achieved. The improvement was reflected in increased teacher and student activities during the implementation of TGT.

In Cycle I, the TGT model began to be implemented, but several problems prevented optimal teacher and student involvement. Some students participated insufficiently in group discussions, lacked confidence when expressing opinions, and were not yet accustomed to games and tournaments. Students also had difficulty understanding the rules for using

Question Cards and conducting the My Friend 100 tournament. Teacher activity reached 73% and was classified as Fair (C), while student activity reached 74% and was also classified as Fair (C). These results showed that the learning process had not yet met the established success criterion.

In Cycle II, improvements were made based on the Cycle I reflection by optimizing every stage of the TGT model. The teacher provided clearer directions, guided students during group activities, and improved the games and tournament so that all students could participate actively. The teacher also clarified the rules for using Question Cards and the My Friend 100 tournament procedure, helping students understand the activities more effectively. These improvements positively affected the learning process, as shown by stronger cooperation among students, greater confidence in answering questions, and more active participation in games and tournaments. Teacher activity increased to 98% and student activity to 93%, both of which were classified as Good (B).

The findings showed that the Teams Games Tournament (TGT) cooperative learning model improved students' mathematics learning process. This improvement occurred because TGT enabled students to participate directly in teamwork, games, and tournaments. Through group activities, students helped one another understand the material, exchanged ideas, and cooperated to complete tasks. Games and tournaments also created a more engaging learning environment, which increased student enthusiasm. This result supports Prastini's (2020) view that TGT is a cooperative learning model that emphasizes active interaction among students through cooperation in learning groups.

The TGT model also supported more active and interactive learning. Students improved in cooperation, confidence when expressing opinions, and motivation to participate. This finding is consistent with Pratiwi et al. (2023), who stated that TGT allows students to play an active role through games and team recognition. Rusyanto (2021) likewise argued that TGT encourages students to express ideas more confidently, cooperate, and help one another understand the learning material.

The findings were further supported by Usman et al. (2023), who showed that TGT improved students' learning processes through discussion, cooperation, and academic competition. Handayani et al. (2025) also found that TGT increased student engagement in mathematics by strengthening group discussion, interaction among students, and learning motivation.

2. Implementation of the Teams Games Tournament Cooperative Learning Model to Improve Students' Mathematics Learning Outcomes

The implementation of the Teams Games Tournament (TGT) cooperative learning model in Grade V mathematics at UPTD SD Negeri 136 Barru improved student learning outcomes from Cycle I to Cycle II. The study was conducted in two cycles and was concluded after Cycle II because the established success criterion had been achieved. The improvement was reflected in changes in student mastery in each cycle based on the evaluation results.

In Cycle I, student learning outcomes began to improve after the TGT model was implemented, but they had not yet met the established success criterion. Some students still had difficulty understanding data collection and presentation because they were adapting to group-based learning, games, and tournaments. Several students also required guidance to understand the concepts and complete the assigned tasks. The evaluation showed that 13 of 21 students achieved mastery, representing 65%, while the remaining 8 students did not achieve mastery.

In Cycle II, improvements were made based on the Cycle I reflection by optimizing every stage of the TGT model. The teacher reinforced the material, guided group activities, and encouraged all students to participate in discussions, games, and tournaments. The use of Question Cards and the My Friend 100 game also helped students understand the material through more engaging and interactive activities. These improvements increased learning outcomes, with 18 students achieving mastery at a rate of 82%, thereby meeting the study's success criterion.

The improvement in learning outcomes occurred because the Teams Games Tournament (TGT) model allowed students to participate actively through teamwork, games, and tournaments. These activities helped students understand the material through discussion, exchange of ideas, and cooperation in solving problems. Positive competition during the tournament also increased students' motivation to learn and contribute their best efforts to their groups. This finding is consistent with Prabawati et al. (2025), who stated that games and competitions in TGT can increase student engagement and learning outcomes.

The improvement in learning outcomes was also supported by previous studies. Qona'ah et al. (2025) found that the Teams Games Tournament (TGT) learning model effectively improved students' mathematics learning outcomes, as indicated by higher average scores and the achievement of learning mastery after its implementation. Putra and

Rohman (2023) similarly found that TGT improved the mathematics learning outcomes of Grade V students through increases in average scores and mastery from Cycle I to Cycle II. Banjarnahor and Siregar (2025) further confirmed that TGT improved learning mastery through teamwork, games, and tournaments. These findings indicate that TGT creates more meaningful learning experiences because students participate actively in understanding the material, cooperating, and solving problems together.

The results of Cycles I and II showed that the actions achieved the established research objectives. The implementation of the Teams Games Tournament (TGT) cooperative learning model in mathematics instruction on data collection improved both the learning process and the learning outcomes of Grade V students at UPTD SD Negeri 136 Barru.

These findings are consistent with Wiranti (2019), who found that the TGT cooperative learning model improved both the mathematics learning process and student learning outcomes. TGT allowed students to participate actively through group activities, games, and academic tournaments that promoted cooperation, interaction, responsibility, and learning motivation. This active involvement created a more enjoyable learning environment, made instruction more effective, and improved student learning outcomes.

CONCLUSION

The mathematics learning process of Grade V students at UPTD SD Negeri 136 Barru improved from Cycle I to Cycle II through the implementation of the Teams Games Tournament (TGT) cooperative learning model. The improvement was reflected in stronger teacher and student activities and the creation of more active, interactive, and student-centered instruction through group activities, games, and tournaments.

The Teams Games Tournament (TGT) cooperative learning model improved the mathematics learning outcomes of Grade V students at UPTD SD Negeri 136 Barru. Student mastery increased from 65% in Cycle I to 82% in Cycle II. Therefore, TGT was effective in mathematics instruction because it increased student engagement and helped students understand the material through engaging and enjoyable learning activities.

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