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Implementing the Team Games Tournament Model to Improve Cognitive Learning Outcomes in IPAS for Fifth-Grade Students

Raudhatul Aziza*, Nashrullah, Nurul Kami Sani, Arif Firmansyah, Khairunnisa
Primary School Teacher Education, Tadulako University, Palu, 94118, Indonesia

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* *Corresponding author:*

E-mail: raudhatulaziza631@gmail.com

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A B S T R A C T

This study investigates the effectiveness of the Team Games Tournament (TGT) cooperative learning model in enhancing cognitive learning outcomes among fifth-grade students at SD Inpres Kayuboko in the IPAS subject. The research was driven by low academic performance, largely due to conventional and uninspired teaching practices. Utilizing a Classroom Action Research (CAR) design, the study was conducted over two cycles, each comprising planning, action, observation, and reflection stages. Twenty students participated as research subjects. Data were gathered through cognitive achievement tests, classroom observations, interviews, and documentation. Results from the first cycle showed a learning mastery rate of 70% with an average score of 70.4. In the second cycle, mastery improved to 85% with an average of 78.65. These findings confirm that the TGT model effectively boosts student motivation, participation, and cognitive achievement in a structured and engaging learning environment. The study recommends integrating TGT into classroom instruction to support better learning outcomes and improve overall educational quality in primary schools.

1. Introduction

Education plays a vital role in improving human quality by facilitating the development of individual potential, which includes personality, intelligence, moral values, and useful skills for both personal and societal benefit (Nurhayati et al., 2022). It is also seen as a conscious effort to create an engaging learning environment where students can actively develop their abilities (Aryanthi et al., 2019). In this context, learning is defined as a deliberate activity undertaken by an individual to acquire new knowledge, concepts, or understandings, resulting in behavioral changes in relation to oneself, others, or the surrounding environment (Raudhah et al., 2018).

In classroom practice, teachers are expected to utilize various instructional methods to maintain student engagement and cater to diverse learning needs. The use of

monotonous and teacher-centered methods, such as conventional lectures, often leads to disinterest among students and negatively affects their motivation and academic performance (Bagja Sulfemi, 2019). Observations indicate that many teachers still adopt these outdated strategies, focusing solely on content delivery without considering the students' active involvement. This results in a lack of meaningful learning experiences, ultimately reflected in poor academic outcomes. Learning outcomes, particularly cognitive achievements, are essential indicators of students' understanding and skill development following instructional activities. These outcomes are typically measured using standardized tests, which assess the extent to which students have mastered specific learning objectives. However, in practice, many students struggle to meet these standards, especially in subjects like Social Studies. This issue is often attributed to ineffective teaching methods that do not promote student-centered learning.

In the Indonesian elementary school curriculum, subjects such as Natural Sciences (IPA) and Social Sciences (IPS) were initially taught separately. However, the recent *Kurikulum Merdeka* reform has merged these into a single subject known as *Ilmu Pengetahuan Alam dan Sosial* (IPAS), or Integrated Natural and Social Sciences. This integration aims to provide students with holistic knowledge that connects scientific concepts with real-world social issues, thus fostering critical thinking, collaboration, communication, and creativity (Suhelayanti et al., 2023). By linking scientific inquiry with social understanding, students are better equipped to address contemporary global challenges.

Social Studies (IPS), as a discipline, encompasses content from various social science domains such as sociology, history, geography, economics, law, and politics. The primary goal of IPS education is to develop students' awareness and sensitivity to social issues, encouraging them to become responsible citizens who can actively contribute to social improvement (Wahidin et al., 2021 ; Jupni Hadifina et al., 2023). Despite the importance of these objectives, preliminary observations at SD Inpres Kayuboko revealed several challenges in the classroom. First, students were not actively engaged during lessons. Second, instructional media were limited to basic tools such as textbooks, whiteboards, and pictures. Third, the learning atmosphere lacked enjoyment, leading to decreased attention and participation. Lastly, the teacher-centered approach hindered interactive learning, resulting in student boredom and difficulty comprehending the material.

Assessment results further confirmed the issue. In a fifth-grade class of 20 students, only 12 met the school's minimum passing grade (KKM) of 70 in the IPAS subject, while 8 students failed to achieve this standard. These findings indicate a significant gap in student performance and highlight the need for a more effective instructional approach. One promising strategy to address this issue is the implementation of the Team Games Tournament (TGT) model, a type of cooperative learning that integrates competitive games into group learning activities. The TGT model encourages active student participation through structured tournaments, enhancing motivation and engagement. According to Wahyuni et al. (2020) TGT increases student enthusiasm by introducing game-based learning, which is particularly appealing to young learners. It also fosters classroom management, as teachers take

on the role of facilitators during tournaments, ensuring an organized learning process.

Several advantages contribute to the effectiveness of the Team Games Tournament (TGT) model in enhancing students' cognitive learning outcomes. The incorporation of competitive games serves as a strong motivational tool, encouraging students to participate more actively in the learning process. This engaging format reduces student passivity and promotes sustained attention throughout the lesson. Furthermore, the teacher's role as a facilitator during the tournament allows for more efficient classroom management, creating a structured yet dynamic learning environment. TGT also fosters essential social skills by emphasizing teamwork and collaboration among students. By organizing students into mixed-ability groups, the model encourages peer teaching, where more advanced learners support their peers in understanding the material, thereby reinforcing their own knowledge. Additionally, the cooperative nature of TGT ensures that every student is meaningfully involved in the learning process, promoting a sense of belonging and shared responsibility within the group. Collectively, these aspects make TGT a comprehensive and inclusive instructional approach that addresses both academic and social dimensions of student development.

Given these potential benefits, this study aims to investigate the implementation of the TGT cooperative learning model to enhance cognitive learning outcomes in IPAS among fifth-grade students at SD Inpres Kayuboko. By using classroom action research, this study seeks to determine whether the TGT model can foster more effective and engaging learning environments and improve students' academic performance in integrated science and social studies.

2. Methodology

This study employed a Classroom Action Research (CAR) design aimed at improving the cognitive learning outcomes of fifth-grade students at SD Inpres Kayuboko in the "Bumiku Sayang, Bumiku Malang" topic within the integrated Science and Social Studies (IPAS) subject. The research was conducted over two cycles, with each cycle encompassing the stages of planning, action, observation, and reflection, as outlined by Kemmis and McTaggart. This iterative process allowed the researchers to continuously refine teaching strategies based on data collected and reflections from prior cycles.

The research subjects comprised 20 students from class V, consisting of an equal number of male and female students—10 boys and 10 girls. The selection of SD Inpres Kayuboko was based on the school's openness to pedagogical innovation and the support received from the school administration and teachers. The main objective of the research was to examine the extent to which the implementation of the cooperative learning model, specifically the Team Games Tournament (TGT) type, could positively influence students' cognitive performance in IPAS.

A mixed-methods approach was applied, combining both qualitative and quantitative techniques to gather comprehensive data. Data collection methods included classroom observations, semi-structured interviews, and cognitive achievement tests. Observational data were used to assess the behavior, engagement, and activity levels of both students and teachers during the learning process. The observation sheets captured student participation, enthusiasm, collaboration, and the teacher's adherence to the instructional sequence prescribed by the TGT model. Interviews were conducted with students and teachers to gain deeper insights into their experiences and perceptions of the TGT learning environment. In addition, documentation in the form of lesson plans, photographs, and learning media supported the triangulation of data.

Quantitative data were obtained through pre-tests and post-tests administered at the end of each cycle to evaluate students' cognitive mastery of the subject matter. The percentage of individual learning mastery (DSI) was calculated using the formula:
DSI =

$$DSI = \frac{\text{Score obtained}}{\text{Maximum Score}}\ x\ 100\%$$

Students were categorized as having achieved individual mastery if they scored at least 70%. Classical Absorption Rate (CAR)

$$DSK = \frac{\text{Total obtained scores of all students}}{\text{Maximum total test scores}} x100\%$$

A student is considered to have achieved individual mastery if they reach a minimum mastery score of 70. Class-level mastery (KBK) was analyzed using:
KBK =

$$KBK = \frac{\text{Number of Students Who Met KKM}}{\text{Total Number of Students}} \text{x } 100\%$$

The class was considered to have achieved classical completeness if at least 70% of the students reached the minimum mastery criterion (KKM) set by the school, which was 70. To further analyze the effectiveness of the intervention, the normalized gain score (N-Gain) was calculated using the formula proposed by Hake (1999):

$$\text{N} - \text{Gain} = \frac{(\text{Post} - \text{test Score} - \text{Pre} - \text{test Score})}{(\text{Maximum Score} - \text{Pre} - \text{test Score}}$$

This gain index provided a standardized measure of learning improvement across cycles. The intervention was deemed successful if at least 80% of the students, or a minimum of 16 out of 20, achieved the school's KKM. Qualitative data analysis followed the model of Miles and Huberman (1984), which includes three primary steps: data reduction, data display, and conclusion drawing/verification. During the data reduction phase, raw data were simplified and organized to highlight key patterns and themes. The display phase involved the systematic presentation of data in the form of descriptive summaries, charts, or tables to facilitate interpretation. Finally, conclusions were drawn based on the synthesized data, and these findings

were revisited for verification through continuous comparison with subsequent data to ensure consistency and validity.

In this study, the activities of both teachers and students during the learning process were observed and analyzed, then categorized into five levels of implementation: very poor, poor, moderate, good, and very good. This classification was employed to assess the quality and consistency of the application of the Teams Games Tournament (TGT) learning model in the classroom. The percentage of observation results was calculated using the following formula:

$$\text{Percentage} = \frac{\text{Total Score Obtained}}{\text{Maximum Possible Score}} \times 100\%$$

Table 1. Criteria for the Implementation of Learning Activities by Students and Teachers

Percentage	Category
90% < A ≤ 100%	Very Good
75% < B ≤ 90%	Good
50% < C ≤ 75%	Moderate
30% < D ≤ 50%	Poor
0% < E ≤ 30%	Very Poor

This systematic and cyclic research process allowed the researchers to assess not only the outcomes of student learning but also the dynamics of classroom interaction under the TGT model. The intervention's effectiveness was confirmed by the observed improvements in student engagement and post-test results across both cycles. These methodological steps provided a rigorous foundation for evaluating how cooperative, game-based learning strategies can elevate cognitive achievement in primary-level IPAS instruction.

3. Results and Discussion

This classroom action research aimed to improve cognitive learning outcomes in the Natural and Social Sciences (IPAS) subject through the implementation of the Team Games Tournament (TGT) cooperative learning model. Conducted on May 14, 2025, at SD Inpres Kayuboko with 20 fifth-grade students, this study was rooted in the urgency of addressing low learning achievement and passive classroom behavior. The balanced gender composition (10 male and 10 female students) allowed for equitable group interactions, promoting inclusivity and heterogeneous teamwork. The study was executed in two cycles, each consisting of two instructional meetings, making the intervention both focused and time-efficient.

The TGT model was implemented through a five-phase structure designed to maximize both cognitive and social development. The first phase (class presentation) employed visual (PowerPoint), auditory (video), and verbal (interactive questioning) strategies to introduce new content in a multimodal fashion. This not only activated prior knowledge but also addressed diverse learning

styles. In the second phase (team formation), students were strategically grouped based on academic diversity to promote peer tutoring and collaboration. This setup ensured mutual support, allowing stronger students to reinforce their understanding through teaching, while weaker students benefited from peer explanations.

Figure 1. The Students Played Games

The third phase (game stage) introduced an element of gamification, where students participated in educational games designed to review and reinforce previously learned concepts (Figure 1). This stage effectively transformed the assessment process into a low-anxiety, high-engagement activity. The game activities brought elements of challenge and enjoyment into the learning process, making students more enthusiastic and motivated to understand the material. The fourth phase (tournament) elevated the experience by inviting representatives from each group to compete in a friendly academic quiz. This not only reinforced individual accountability but also developed students' communication, confidence, and quick thinking.

The final fifth phase (rewarding) recognized the highest-performing group, introducing extrinsic motivation that supported intrinsic engagement and fostered a sense of achievement. These well-structured and interrelated stages are a significant strength of the study and directly contributed to the observed improvements. Observational data underscored the effectiveness of TGT in enhancing student engagement. In the first cycle, while some students remained hesitant, the majority began adjusting to the cooperative format. Student activity in Cycle I increased from 67.18% in the first meeting (moderate) to 78.75% in the second meeting (good) can be seen in (Table 2).

Table 2. Observation Results of Student Activities During Cycle I

No	Cycle	Score				Total Score	Percentage Score	Category
		1	2	3	4			
1.	I	-	14	21	8	43	67,18%	Moderate
2.	II	-	4	39	20	63	78,75%	Good

In Cycle II, the progress was more pronounced—reaching 81.25% and 83.75% in the respective meetings—demonstrating increased self-confidence, willingness to contribute, and stronger group dynamics. Importantly, this reflects that TGT fosters not just academic gains, but also social-emotional competencies, which are essential in 21st-century learning (Table 3).

Table 3. Observation Results of Student Activities During Cycle II

No	Cycle	Score				Total Score	Percentage Score	Category
		1	2	3	4			
1.	I	-	2	30	20	52	81,25%	Good
2.	II	-	2	33	32	67	83,75%	Good

Teacher activity, an often overlooked yet crucial component in classroom-based interventions, also improved significantly. Initially, the teacher retained a traditional, teacher-centered stance (75% in Cycle I Meeting 1), but later adopted more facilitative and student-centered methods (Table 4).

Table 4. Observation Results of Teacher Activities During Cycle I

No	Cycle	Score				Total Score	Percentage Score	Category
		1	2	3	4			
1.	I	-	12	39	-	51	75%	Moderate
2.	II	-	-	27	28	55	85,93%	Good

By Cycle II, the scores rose to 89.06%, indicating greater use of differentiated instruction, effective media integration, and timely feedback. This transformation reflects not only instructional improvement but also a shift in teacher mindset—moving from delivering content to designing meaningful learning experiences (Table 5).

Table 5. Observation Results of Teacher Activities During Cycle II

No	Cycle	Score				Total Score	Percentage Score	Category
		1	2	3	4			
1.	I	-	-	30	28	58	85,29%	Good
2.	II	-	-	21	36	57	89,06%	Good

The cognitive learning outcomes showed notable improvement. The percentage of students achieving mastery increased from 45% (pre-test) to 70% in Cycle I, and further to 85% in Cycle II, with the average post-test score reaching 79.95 and an N-Gain of 0.53 (medium category). These results are particularly meaningful given the relatively short duration of the intervention. Such significant improvement in a compressed time frame emphasizes the efficiency and practical applicability of the TGT model in real classroom settings.

Theoretically, the success of TGT aligns well with Jean Piaget's theory of cognitive constructivism. At the concrete operational stage, learners construct knowledge best through direct experiences, manipulation of objects, and meaningful peer interaction. The TGT model embodies these principles through its structured yet flexible phases, allowing students to explore, discuss, and apply knowledge

collaboratively. Moreover, the competitive element in TGT resonates with students' natural desire for achievement and recognition, thereby bridging cognitive engagement with emotional motivation.

This study's findings are also supported by a growing body of empirical research. (Mahayasa, 2023) emphasized the effectiveness of TGT in promoting active learning and improving academic performance. (Widiani et al., 2020) demonstrated that game-based TGT could enhance not only learning outcomes but also social values such as cooperation and honesty. Nurhayati et al. (2022) and Sitepu et al. (2022) found TGT particularly effective in science learning at the elementary level. These convergent results validate the replicability and scalability of the TGT model across subjects and learning contexts.

In the context of Indonesia's Merdeka Curriculum, the TGT model offers a compelling approach to contextual and student-centered learning. As emphasized by Agustina et al. (2022) and Rahman & Fuad (2023) the curriculum encourages pedagogical innovation, critical thinking, and local relevance. TGT aligns with this vision by integrating critical thinking, collaboration, and joyful learning—elements often missing in conventional approaches. Additionally, the model empowers teachers to apply their pedagogical content knowledge (PCK) in designing differentiated and meaningful instruction.

Despite the promising results, the study is not without limitations. The short duration—limited to only two meetings per cycle—restricted students' full adaptation to certain TGT phases, particularly the tournament and rewarding stages. Some students required more time to understand the rules, develop confidence, and internalize the competitive structure. This time constraint may have limited the model's maximum impact, especially on students with slower processing or lower initial motivation.

Therefore, future research should consider extending the implementation period to provide students with sufficient time for adjustment and deeper engagement. Incorporating more diverse media, formative assessments, and culturally relevant games may further enhance student participation and comprehension. Additionally, applying TGT across other subjects or combining it with digital learning platforms may open new pathways for blended, high-impact learning in the post-pandemic era. In conclusion, this study provides robust evidence that the Team Games Tournament model is a powerful instructional strategy that enhances not only cognitive achievement but also student engagement, collaboration, and classroom dynamics. Its alignment with constructivist learning theory and national curriculum goals makes it a promising pedagogical tool for 21st-century elementary education.

4. Conclusion

This study concludes that the implementation of the cooperative learning model *Teams Games Tournament* (TGT) significantly contributes to enhancing students' cognitive learning outcomes in Science and Social Studies (IPAS) at the elementary

level. By incorporating structured stages—such as class presentations, group discussions, educational games, tournaments, and recognition—the TGT model promotes active engagement, healthy academic competition, and collaborative learning. These elements foster not only conceptual understanding but also the development of students' social competencies, including communication, responsibility, and teamwork.

The success of this research is evident through the positive transformation in students' learning behaviors and the improvement in their overall academic engagement. The model's effectiveness was further supported by qualitative observations and reflective teaching practices, which revealed an increasingly dynamic and student-centered learning environment throughout the implementation cycles.

Furthermore, the findings highlight the value of interactive and collaborative pedagogies like TGT in promoting meaningful learning experiences. Although the cognitive benefits were evident, the model still presents opportunities for refinement—particularly in optimizing each instructional phase to maximize learning impact. Future research could explore the broader implications of TGT on students' affective domains, such as motivation and emotional engagement, and investigate its adaptability across various subjects and educational contexts. In sum, TGT emerges as a promising instructional strategy that not only improves academic outcomes but also supports holistic student development.

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