DEEP LEARNING: Journal of Educational Research

Vol. 1 No. 4 OCTOBER 2025

Implementation of the Teams Games Tournament Model to Increase Student Learning Motivation in Science Learning at MIN 1 Nagan Raya

Nurhalimah[1], MIN 1 Nagan Raya, Indonesia
Nurlisna[2], MIN 11 Aceh Timur, Indonesia

ABSTRACT

This study aims to increase students' learning motivation in science learning through the implementation of the Teams Games Tournament (TGT) cooperative learning model at MIN 1 Nagan Raya. The research employed a Classroom Action Research (CAR) design consisting of two cycles, each including the stages of planning, action, observation, and reflection. The participants were 28 fifth-grade students. Data were collected through learning motivation observation sheets, student motivation questionnaires, interviews, and documentation. The indicators of motivation included students' attention, participation, persistence, enthusiasm, and learning responsibility during science learning activities. Data analysis was conducted using descriptive quantitative and qualitative techniques by comparing the results of motivation scores across cycles. The findings show that the application of the TGT model significantly improved students' learning motivation. In the pre-cycle, the average motivation score was 61.42% (low category). After implementing TGT in Cycle I, the motivation score increased to 74.18% (moderate category), indicating a positive change in student engagement and participation. Furthermore, in Cycle II, the motivation score reached 87.36% (high category), demonstrating strong enthusiasm, active collaboration, and greater responsibility in completing science learning tasks. Questionnaire results also confirmed this improvement, with the average student motivation response increasing from 63.10% in Cycle I to 88.20% in Cycle II. The study concludes that the Teams Games Tournament model is effective in fostering a more enjoyable, competitive, and cooperative learning atmosphere, which positively influences students' motivation in science learning. Therefore, TGT is recommended as an alternative learning strategy to enhance student motivation and classroom learning quality in Islamic elementary schools.

Corresponding Author:

Nurhalimah
MIN 1 Nagan Raya, Indonesia
nurhalimaah91@gmail.com

OPEN ACCESS

ARTICLE HISTORY
Received: 3 September 2025
Revised: 1 October 2025
Accepted: 12 October 2025
Published: 31 October 2025

KEYWORDS
Teams Games Tournament; Learning Motivation; Science Learning; Cooperative Learning; Islamic Elementary School.

Introduction

Science learning in elementary education plays a fundamental role in shaping students' critical thinking skills, curiosity, and scientific attitudes, which are essential for preparing young learners to face the demands of the 21st century. Science is not merely a subject that introduces natural phenomena but also a medium to cultivate reasoning abilities, problem-solving skills, and evidence-based thinking through observation and experimentation (Bybee, 2013). In the context of Islamic elementary schools, science learning is expected to contribute not only to cognitive development but also to character formation and moral awareness in accordance with Islamic educational values (Halstead, 2004).

However, one of the persistent challenges in science learning at the elementary level is the low learning motivation of students. Motivation is a crucial psychological factor that influences learning persistence, engagement, achievement, and academic success (Schunk et al., 2014). Students who lack motivation tend to show passive behavior, minimal participation, and limited enthusiasm during the learning process, which ultimately affects their understanding of scientific concepts (Glynn et al., 2011). Therefore, improving student motivation becomes an urgent concern for educators, particularly in science education which often requires active exploration and inquiry.

Motivation in learning is commonly defined as an internal and external drive that initiates, guides, and sustains learning behaviors (Ryan & Deci, 2000). Students' motivation is shaped by multiple factors, including teaching methods, classroom environment, peer interaction, learning materials, and teacher support (Pintrich, 2003). When students perceive learning as meaningful, enjoyable, and achievable, they are more likely to develop intrinsic motivation that leads to long-term learning engagement (Deci & Ryan, 2008). Conversely, monotonous teaching methods may decrease students' interest and hinder the development of learning enthusiasm (Slavin, 2014).

In many elementary classrooms, science learning is still dominated by conventional teaching practices such as teacher-centered explanations and memorization of concepts. Although these methods may allow teachers to deliver content efficiently, they often limit students' opportunities to actively participate in learning activities (Prince, 2004). As a result, students may view science as difficult, abstract, and less interesting. This condition becomes more problematic when students are not provided with interactive learning experiences that encourage curiosity and active discovery (National Research Council, 2012).

In Islamic elementary schools, including madrasah ibtidaiyah, the quality of learning is expected to align with national education goals while integrating Islamic values. Islamic education emphasizes holistic development, combining intellectual growth with moral and spiritual maturity (Al-Attas, 1993). Therefore, science learning

should be designed in a way that supports students' active involvement and strengthens their motivation, while still fostering ethical responsibility and cooperation in the classroom (Memon & Alhashmi, 2018). This indicates that innovative teaching models are necessary to enhance student motivation and classroom engagement.

One of the instructional approaches that has been widely recognized for promoting motivation and active participation is cooperative learning. Cooperative learning emphasizes collaboration among students in small groups to achieve shared learning goals (Johnson & Johnson, 2009). Through cooperative learning, students are encouraged to interact, share ideas, and help each other understand learning materials. Such interaction not only supports cognitive achievement but also strengthens social skills, communication, and teamwork (Gillies, 2016). Cooperative learning is also aligned with Islamic values of mutual assistance and collective responsibility, which are highly emphasized in Islamic teaching.

Among various cooperative learning strategies, the Teams Games Tournament (TGT) model is considered a highly engaging approach because it integrates teamwork with competitive academic games. The TGT model was developed as part of cooperative learning structures to enhance students' motivation through group-based tournaments and educational games (Slavin, 1995). In TGT, students work in teams to master learning content, and then participate in structured tournaments where they compete with students from other teams with similar ability levels. This mechanism provides equal opportunities for all students to contribute and achieve success (Huda, 2017).

The use of game elements in learning is increasingly supported by educational research. Game-based learning has been shown to stimulate students' interest, enjoyment, and motivation because it provides a sense of challenge, reward, and achievement (Gee, 2003). When students perceive learning as a meaningful game-like experience, they tend to become more engaged and willing to invest effort in learning tasks (Hamari et al., 2016). Therefore, integrating cooperative learning with games, as found in the TGT model, has the potential to create a more enjoyable and motivating classroom atmosphere.

Motivation is closely related to students' emotional engagement during learning. Emotional engagement refers to the extent to which students feel interested, happy, and confident in learning activities (Fredricks et al., 2004). The TGT model encourages emotional engagement because students are involved in group cooperation and tournament activities that create excitement and social interaction. Such learning experiences can reduce boredom and anxiety, which are common obstacles in science learning (Wang & Eccles, 2013). Consequently, students may develop a stronger sense of confidence and learning enthusiasm.

Furthermore, the TGT model can support active learning, which is widely acknowledged as an effective strategy for improving learning outcomes and student engagement. Active learning refers to instructional methods that involve students in meaningful activities that require them to think, discuss, and solve problems (Bonwell & Eison, 1991). In science education, active learning is essential because science concepts are better understood through exploration, questioning, and interaction rather than passive listening (Michael, 2006). The tournament-based structure in TGT provides students with opportunities to actively recall information, apply concepts, and respond to questions in an interactive setting.

In the Indonesian educational context, student motivation remains a major issue, especially in elementary science learning. Many students experience difficulties in understanding scientific concepts due to limited learning resources, lack of practical activities, and the dominance of lecture-based instruction (Widodo & Duit, 2004). In addition, students often perceive science as a difficult subject that requires memorization rather than understanding. This perception can reduce students' willingness to participate actively and decrease their learning motivation (Suryani & Handayani, 2018). Therefore, improving instructional practices becomes essential for enhancing science learning motivation in madrasah settings.

MIN 1 Nagan Raya, as an Islamic elementary school, faces similar challenges. Preliminary observations indicate that many students demonstrate low motivation in science learning, as shown by limited classroom participation, low enthusiasm, and lack of confidence in answering questions. Students tend to be passive, relying heavily on teacher explanations, and showing minimal collaborative interaction. Such conditions may result in low learning achievement and weak scientific understanding. This problem requires an instructional intervention that can foster a more active and enjoyable learning environment.

Teachers play a crucial role in shaping students' learning motivation. Teacher competence in selecting instructional strategies significantly influences classroom dynamics and students' learning attitudes (Darling-Hammond, 2017). Effective teachers are expected to create meaningful learning experiences by using interactive models that stimulate students' curiosity and participation. When teachers apply appropriate learning models, students are more likely to develop interest and intrinsic motivation in learning science (Brophy, 2010). Therefore, the selection of the TGT model is considered a relevant effort to improve science learning motivation.

The implementation of TGT is supported by several empirical studies. Previous research has shown that TGT can improve student motivation and academic achievement across various subjects, including mathematics, science, and social studies (Tran, 2014). Cooperative learning structures such as TGT have been proven to enhance

students' engagement because they create positive interdependence and individual accountability (Johnson et al., 2014). Additionally, the tournament element encourages students to learn more actively because they feel challenged to perform well for their teams (Slavin, 2014).

In science education, cooperative learning is particularly beneficial because it allows students to discuss scientific ideas and construct understanding through peer interaction. According to Vygotsky's social constructivist theory, learning occurs effectively when students engage in social interaction and collaborative problem solving (Vygotsky, 1978). TGT provides a structured environment where students can learn from their peers and strengthen their understanding of scientific concepts through team discussions. Such collaborative interaction supports deeper learning and promotes long-term retention of knowledge (Gillies, 2016).

Motivation improvement is also linked to the concept of self-efficacy, which refers to students' belief in their ability to succeed in learning tasks (Bandura, 1997). Students with high self-efficacy tend to show stronger motivation, persistence, and academic resilience. The TGT model provides repeated opportunities for students to experience success in tournaments and team discussions, which may strengthen their confidence and self-efficacy. When students feel capable, they are more likely to become motivated and actively involved in science learning activities (Schunk & DiBenedetto, 2020).

Moreover, the competitive aspect of TGT is structured in a way that promotes fair competition. Unlike traditional competition that may create inequality among students, TGT uses ability-based tournament groupings, ensuring that students compete with peers of similar competence (Slavin, 1995). This system reduces the risk of discouragement among lower-achieving students and promotes equal participation. Consequently, students are more motivated to contribute because their performance matters in achieving team success.

In the context of Islamic education, cooperative learning is also consistent with the principles of ukhuwah (brotherhood), ta'awun (mutual help), and collective responsibility. Islamic pedagogy emphasizes that learning should not only focus on individual achievement but also encourage collaboration and social harmony (Halstead, 2004). Therefore, the implementation of TGT in science learning is expected to promote both academic motivation and positive social interaction among students, supporting holistic educational goals.

Classroom Action Research is considered an appropriate approach to address classroom-based problems such as low motivation. CAR allows teachers to systematically identify problems, implement interventions, observe results, and reflect on improvements through iterative cycles (Kemmis & McTaggart, 2014). This research approach is particularly relevant for improving teaching practices because it emphasizes

practical solutions based on real classroom conditions. Through CAR, the implementation of the TGT model can be evaluated continuously to determine its effectiveness in increasing student motivation.

Despite the growing evidence of the effectiveness of cooperative learning, the application of TGT in Islamic elementary schools, particularly in rural contexts such as Nagan Raya, remains underexplored. Many previous studies have focused on urban schools or general elementary settings. Therefore, research in MIN 1 Nagan Raya provides an important contribution by offering empirical insights into how TGT can be implemented effectively in madrasah environments. This study also provides practical implications for teachers seeking innovative strategies to improve science learning motivation.

Based on these considerations, this study aims to examine the implementation of the Teams Games Tournament model as an effort to increase students' learning motivation in science learning at MIN 1 Nagan Raya. The study focuses on identifying the improvement of motivation indicators across learning cycles and describing how the TGT model influences students' engagement and enthusiasm. The results of this study are expected to contribute to the development of cooperative learning practices in Islamic education, particularly in enhancing student motivation and creating enjoyable science learning experiences.

In summary, improving student motivation is a key challenge in elementary science education, and the use of interactive cooperative learning models such as TGT is considered a promising solution. By integrating teamwork, games, and structured tournaments, TGT can foster a learning atmosphere that encourages active participation, responsibility, and enjoyment. Therefore, the implementation of TGT is expected to provide meaningful improvement in student motivation and support better learning quality in MIN 1 Nagan Raya.

This research is expected to provide theoretical and practical contributions. Theoretically, it strengthens the understanding of motivation development through cooperative learning in Islamic elementary school contexts. Practically, it offers a learning model alternative for teachers to enhance classroom engagement and improve the quality of science learning. Thus, the findings may serve as a reference for educators and researchers in developing effective instructional innovations that align with both academic standards and Islamic educational values.

Methods

This study employed a Classroom Action Research (CAR) design aimed at improving students' learning motivation in science learning through the implementation of the Teams Games Tournament (TGT) model at MIN 1 Nagan Raya. Classroom action

research was selected because it provides a systematic framework for teachers and researchers to solve instructional problems through reflective and cyclical interventions in real classroom settings (Kemmis & McTaggart, 2014). The CAR approach in this study was conducted through iterative cycles consisting of planning, action, observation, and reflection, enabling continuous improvement of teaching practices based on classroom evidence (Creswell & Creswell, 2018).

The research was conducted at MIN 1 Nagan Raya, an Islamic elementary school located in Aceh Province, Indonesia. The participants of this study were 28 students of Grade V, consisting of 15 male and 13 female students. The selection of participants was based on the identified classroom problem, namely students' low learning motivation in science learning. The researcher collaborated with the classroom teacher as a partner in implementing the action, conducting observations, and reflecting on the learning process. The science topic selected for the intervention was aligned with the Grade V curriculum and was taught during the second semester of the academic year.

The classroom action research was conducted in two cycles, with each cycle consisting of two meetings. Each cycle followed four stages: planning, action, observation, and reflection (Kemmis & McTaggart, 2014). In the planning stage, the researcher prepared lesson plans based on the TGT model, designed learning materials, prepared game cards and tournament questions, and developed observation and questionnaire instruments to measure students' learning motivation. In the action stage, the TGT learning procedures were implemented in the classroom. The observation stage involved collecting data on student motivation and learning activities using observation sheets and field notes. Finally, in the reflection stage, the researcher and classroom teacher evaluated the results of the cycle, identified weaknesses in implementation, and designed improvements for the next cycle.

In the pre-cycle stage, the researcher conducted initial observations and distributed a motivation questionnaire to identify baseline motivation levels. The findings from the pre-cycle became the foundation for determining the urgency of implementing TGT as an instructional intervention.

The implementation of the TGT model in this study followed the cooperative learning procedures proposed by Slavin (1995), which consist of five main steps: class presentation, team formation, games, tournament, and team recognition. During class presentation, the teacher introduced the science material through interactive explanations and questioning strategies. Students were then divided into heterogeneous teams consisting of four to five members, ensuring diversity in academic ability and gender. In the games stage, students practiced answering science-related questions through educational game cards designed to reinforce key concepts. The tournament stage involved structured academic competitions where students competed

with representatives from other teams based on similar achievement levels. Points obtained during the tournament were accumulated as team scores. Finally, in the team recognition stage, the teacher announced the best-performing teams and provided reinforcement in the form of praise and symbolic rewards to enhance student motivation.

The TGT model was applied consistently in both cycles, with improvements made in Cycle II based on the reflection results from Cycle I. Improvements included increasing the clarity of game rules, providing more varied tournament questions, and strengthening teacher guidance to ensure equal participation among all students.

Data were collected using multiple instruments to ensure comprehensive measurement of students' learning motivation. The primary data collection techniques included classroom observation, motivation questionnaires, interviews, and documentation. Observations were conducted using a structured motivation observation sheet based on motivation indicators such as attention, participation, enthusiasm, persistence, cooperation, and responsibility during science learning activities. The observation was carried out by the researcher and the classroom teacher to strengthen objectivity.

Motivation questionnaires were distributed to students at the end of each cycle to measure changes in learning motivation quantitatively. The questionnaire items were developed based on the motivation theory of Ryan and Deci (2000) and consisted of Likert-scale statements ranging from strongly disagree to strongly agree. Interviews were conducted with selected students and the classroom teacher to explore perceptions of the TGT model implementation and identify factors influencing motivation changes. Documentation, including lesson plans, student worksheets, photographs, and learning outcome records, was collected to support the validity of the findings.

The main research instruments included lesson plans based on the TGT model, observation sheets, motivation questionnaires, and interview guidelines. The observation sheet was designed to measure student motivation behaviorally during learning activities. The questionnaire instrument consisted of 20 statements representing intrinsic and extrinsic motivation dimensions. Content validity of the instruments was reviewed through expert judgment involving two education lecturers and one science teacher to ensure that the indicators matched the research objectives. Instrument reliability was tested using Cronbach's Alpha, and the questionnaire showed acceptable reliability with a coefficient above 0.70, indicating that the instrument was consistent for measuring student motivation (Fraenkel et al., 2019).

Data analysis in this study used both quantitative and qualitative approaches. Quantitative data obtained from motivation observation sheets and questionnaires

were analyzed using descriptive statistics, including mean scores and percentages. The motivation score was calculated using the formula:

Motivation Percentage = (Obtained Score / Maximum Score) × 100%

The motivation level was categorized into four criteria: very low (0–54%), low (55–69%), moderate (70–84%), and high (85–100%). The improvement of motivation was determined by comparing the results of the pre-cycle, Cycle I, and Cycle II.

Qualitative data from interviews, field notes, and documentation were analyzed using thematic analysis by identifying patterns of student behavior, classroom interaction, and teacher reflection during the implementation of TGT. The qualitative findings were used to support and interpret the quantitative results, ensuring a deeper understanding of how the TGT model influenced student learning motivation.

To ensure data validity and trustworthiness, this study applied methodological triangulation by comparing data from observations, questionnaires, interviews, and documentation (Creswell & Creswell, 2018). Observer triangulation was also conducted by involving the classroom teacher as a co-observer. Member checking was applied by confirming interview results with participants to ensure the accuracy of interpretations. In addition, reflective discussions were conducted after each cycle to evaluate the implementation process and improve the intervention strategy.

This research adhered to ethical principles in educational research. Permission to conduct the study was obtained from the school principal and the classroom teacher. Students and their parents were informed about the research purpose, procedures, and the voluntary nature of participation. Confidentiality was maintained by anonymizing student identities in reporting the findings. The study ensured that all learning activities conducted through the TGT model were aligned with curriculum standards and did not disrupt students' learning rights.

Through these systematic procedures, this classroom action research was designed to provide credible evidence regarding the effectiveness of the Teams Games Tournament model in increasing student learning motivation in science learning at MIN 1 Nagan Raya.

Result

This classroom action research was conducted to examine the effectiveness of the Teams Games Tournament (TGT) model in increasing students' learning motivation in science learning at MIN 1 Nagan Raya. The results were obtained through systematic observations, student motivation questionnaires, and reflective evaluations conducted during the pre-cycle, Cycle I, and Cycle II. The motivation indicators measured in this study included students' attention, participation, persistence, enthusiasm, cooperation,

and responsibility in learning activities. The quantitative results demonstrate a consistent improvement in students' motivation across each stage of the research.

Students' Learning Motivation Results Based on Observation

The observation data were collected to measure student motivation during science learning activities. The results indicate a significant improvement in motivation from the pre-cycle to Cycle II. The percentage scores were calculated based on the total observed motivation score divided by the maximum score, multiplied by 100%. The results are presented in Table 1.

Table 1. Students' Learning Motivation Improvement Based on Observation Results

Stage	Average Motivation Score (%)	Motivation Category
Pre-cycle	61.42%	Low
Cycle I	74.18%	Moderate
Cycle II	87.36%	High

Table 1 shows that students' learning motivation in science learning was initially categorized as low, with an average score of 61.42% during the pre-cycle. This condition reflected limited student engagement, weak participation, and low learning enthusiasm. Students were observed to be passive during classroom interactions, often waiting for teacher instruction and showing minimal initiative in responding to questions or participating in discussions.

After implementing the TGT model in Cycle I, the average motivation score increased to 74.18%, categorized as moderate. This improvement indicates that the cooperative learning activities integrated with educational games and tournaments successfully stimulated students' engagement. During Cycle I, students showed increased interest in the learning process, participated more actively in group discussions, and displayed greater attention during teacher explanations. Nevertheless, some students still demonstrated hesitation in answering tournament questions and relied heavily on more dominant team members.

In Cycle II, after improvements were made based on reflective evaluation, the average motivation score increased further to 87.36%, categorized as high. At this stage, most students showed strong enthusiasm in participating in learning activities, were actively involved in team discussions, and displayed persistence in completing science learning tasks. Students also demonstrated improved responsibility by preparing for tournament sessions and contributing more equally to team performance.

Students' Learning Motivation Results Based on Questionnaire

In addition to observation, students' learning motivation was also measured using a questionnaire distributed at the end of Cycle I and Cycle II. The questionnaire consisted of Likert-scale items designed to assess both intrinsic and extrinsic motivation aspects, including interest in science learning, enjoyment of teamwork, confidence in answering questions, and willingness to complete learning tasks. The results are presented in Table 2.

Table 2. Students' Learning Motivation Improvement Based on Questionnaire Results

Stage	Average Motivation Score (%)	Motivation Category
Cycle I	63.10%	Low-Moderate
Cycle II	88.20%	High

The questionnaire data show that students' motivation in Cycle I reached 63.10%, indicating that although students experienced increased engagement compared to the pre-cycle condition, their intrinsic motivation was not yet fully developed. Some students expressed that they still felt uncertain about their ability to answer questions correctly, and they were still adapting to the tournament mechanism.

However, in Cycle II, the motivation questionnaire score increased significantly to 88.20%, categorized as high. This result suggests that students not only became more interested in science learning but also developed stronger confidence and learning enjoyment. Students expressed greater satisfaction with the learning atmosphere and felt motivated to perform well because their achievements contributed to team success. This improvement reflects the positive influence of TGT on students' psychological engagement, enthusiasm, and sense of achievement.

Improvement of Motivation Indicators Across Cycles

To provide a more detailed understanding of how motivation improved, the observation results were further analyzed based on specific motivation indicators. The findings are presented in Table 3.

Table 3. Improvement of Student Motivation Indicators Based on Observation

Motivation Indicator	Pre-cycle (%)	Cycle I (%)	Cycle II (%)
Attention	62.10%	75.00%	88.50%
Participation	60.00%	73.20%	86.80%
Persistence	61.50%	72.60%	87.20%

Motivation Indicator	Pre-cycle (%)	Cycle I (%)	Cycle II (%)
Enthusiasm	63.00%	74.10%	89.00%
Cooperation	62.00%	76.30%	88.00%
Responsibility	60.90%	74.00%	84.70%
Average	**61.42%**	**74.18%**	**87.36%**

Table 3 illustrates that each motivation indicator improved consistently across the cycles. The attention indicator increased from 62.10% in the pre-cycle to 88.50% in Cycle II, indicating that students became more focused and attentive during science learning. Participation improved from 60.00% to 86.80%, showing that students became more active in discussions, questioning, and tournament sessions. Persistence increased from 61.50% to 87.20%, reflecting students' stronger effort in completing learning tasks and solving science-related problems.

Enthusiasm showed one of the highest improvements, increasing from 63.00% to 89.00%, which demonstrates that the learning process became more enjoyable and stimulating for students. Cooperation also increased from 62.00% to 88.00%, confirming that teamwork elements in TGT effectively promoted collaborative learning. Responsibility increased from 60.90% to 84.70%, indicating that students became more accountable in preparing for tournament activities and completing tasks within their teams.

Comparative Improvement in Motivation Scores

To further strengthen the findings, the motivation improvement across cycles was calculated. The results are presented in Table 4.

Table 4. Improvement Percentage of Student Motivation Across Cycles

Comparison Stage	Improvement (%)
Pre-cycle to Cycle I	12.76%
Cycle I to Cycle II	13.18%
Pre-cycle to Cycle II	25.94%

The improvement data show that motivation increased by 12.76% from the pre-cycle to Cycle I, and by 13.18% from Cycle I to Cycle II. Overall, motivation increased by

25.94% from the pre-cycle to Cycle II. These findings indicate that the TGT model had a strong positive effect on students' learning motivation in science learning at MIN 1 Nagan Raya.

Discussion

The results of this classroom action research demonstrate that the implementation of the Teams Games Tournament (TGT) model significantly increased students' learning motivation in science learning at MIN 1 Nagan Raya. The motivation improvement occurred consistently across two action cycles, as evidenced by observation and questionnaire data. These findings confirm that cooperative learning strategies integrated with structured game and tournament activities can create an engaging learning atmosphere that enhances student motivation.

The improvement of motivation from 61.42% (pre-cycle) to 74.18% (Cycle I) and further to 87.36% (Cycle II) indicates that the learning environment shifted from passive teacher-centered instruction toward active student-centered learning. This finding aligns with motivational learning theory, which suggests that students become more motivated when they are actively involved in meaningful learning experiences (Schunk et al., 2014). TGT provides opportunities for students to participate actively in learning through group discussion, peer collaboration, and game-based reinforcement.

One of the key factors contributing to increased motivation was the cooperative structure of TGT. Cooperative learning encourages positive interdependence, where students rely on each other to achieve shared goals (Johnson & Johnson, 2009). In this study, team-based learning activities motivated students to support their peers and engage in collaborative problem-solving. The significant improvement in cooperation scores from 62.00% in the pre-cycle to 88.00% in Cycle II indicates that students developed stronger teamwork skills, which positively influenced their learning enthusiasm. This is consistent with research suggesting that cooperative learning enhances student engagement by fostering social interaction and supportive peer relationships (Gillies, 2016).

The tournament and game components of TGT also played a major role in motivating students. The findings show that enthusiasm increased from 63.00% to 89.00%, reflecting that students became more excited and emotionally engaged during science learning. Educational games create an enjoyable atmosphere and increase students' willingness to participate in learning activities (Gee, 2003). The tournament structure provided students with challenges and rewards that stimulated their interest and competitive spirit in a positive way. According to Hamari et al. (2016), game-based learning elements such as competition, scoring, and rewards can significantly enhance motivation because they provide a sense of achievement and satisfaction.

Furthermore, the increase in attention and participation indicators suggests that students were more cognitively engaged during science learning. Attention improved from 62.10% to 88.50%, while participation improved from 60.00% to 86.80%. This improvement indicates that students were not only physically involved but also mentally focused on the learning content. Cognitive engagement is an important aspect of motivation because it reflects students' willingness to invest effort in understanding learning materials (Pintrich, 2003). The TGT model encourages students to pay attention to the teacher's explanations and actively participate in discussions because they need to prepare for tournament sessions.

The questionnaire results further strengthen these findings. The significant increase from 63.10% in Cycle I to 88.20% in Cycle II suggests that students developed stronger intrinsic motivation, including interest in science learning and enjoyment of classroom activities. Intrinsic motivation is developed when students perceive learning as enjoyable and meaningful rather than as an obligation (Ryan & Deci, 2000). The TGT model created a learning environment where students experienced enjoyment through interactive games and social learning experiences, which likely strengthened intrinsic motivation.

Another important aspect of motivation improvement in this study relates to students' self-efficacy. Self-efficacy refers to students' belief in their ability to succeed in academic tasks (Bandura, 1997). During the pre-cycle stage, students were hesitant to answer questions and lacked confidence in their abilities. However, after participating in team discussions and tournaments, students gained repeated opportunities to experience success. This success experience likely strengthened their confidence and self-efficacy, which in turn enhanced their motivation. Schunk and DiBenedetto (2020) emphasize that self-efficacy is a strong predictor of motivation because students who believe they can succeed are more willing to persist in learning tasks.

The improvement in persistence from 61.50% to 87.20% also reflects the positive impact of TGT on students' learning effort. Persistence is an important indicator of motivation because it reflects students' willingness to continue learning despite challenges (Brophy, 2010). The TGT model encouraged persistence because students felt responsible for contributing to their team's success. This sense of responsibility is supported by cooperative learning theory, which highlights individual accountability as a key factor in ensuring that each student actively participates in group learning (Slavin, 2014).

The structured competition in TGT also ensured fairness and equal participation. In this model, students compete with peers of similar ability levels, reducing the risk of discouragement among low-achieving students (Slavin, 1995). This approach was evident in Cycle II, where students showed higher responsibility scores and more equal

participation during tournaments. The increased responsibility from 60.90% to 84.70% indicates that students were more prepared and accountable in learning activities. This finding supports the argument that structured cooperative competition can promote both motivation and learning responsibility (Tran, 2014).

In addition, the results of this study can be explained through social constructivist perspectives. Vygotsky (1978) emphasizes that learning occurs effectively through social interaction and collaboration with peers. In the TGT model, students actively constructed their understanding of science concepts through discussion and explanation within their teams. This interaction not only strengthened cognitive understanding but also enhanced motivation because students felt supported by their peers. Gillies (2016) argues that peer interaction in cooperative learning improves student motivation because it creates a learning environment that is less threatening and more supportive.

The findings of this study are also consistent with active learning principles. Active learning requires students to engage in meaningful tasks that stimulate critical thinking and participation (Bonwell & Eison, 1991). In science learning, active learning is essential because students need to explore and apply concepts rather than memorize facts (National Research Council, 2012). The TGT model facilitated active learning by involving students in discussions, question-and-answer games, and tournament challenges that required them to recall and apply science concepts. This process likely contributed to the significant improvement in student motivation and learning engagement.

Moreover, the implementation of TGT in MIN 1 Nagan Raya is relevant to the Islamic educational context. Islamic pedagogy emphasizes values such as cooperation, mutual support, and collective responsibility, which are aligned with cooperative learning principles (Halstead, 2004). The improvement in cooperation and responsibility indicators suggests that TGT not only increased motivation but also strengthened students' social and moral behavior during learning. This is important because Islamic education aims to develop students holistically, integrating academic knowledge with moral character (Al-Attas, 1993).

The improvement from Cycle I to Cycle II was also influenced by reflective revisions made during the research process. In Cycle I, some students were still adapting to the tournament rules and relied on dominant peers. Through reflection, improvements were made by clarifying game procedures, providing structured guidance, and encouraging equal participation. This improvement aligns with the principle of classroom action research, which emphasizes iterative cycles of reflection and improvement to enhance learning quality (Kemmis & McTaggart, 2014). The increased motivation in Cycle II indicates that the refinement of implementation strategies contributed significantly to better student engagement.

Overall, the results confirm that the Teams Games Tournament model is an effective instructional approach for increasing student learning motivation in science learning. The integration of teamwork, game-based activities, and tournament competition created a stimulating learning atmosphere that improved students' attention, participation, enthusiasm, persistence, cooperation, and responsibility. This study supports previous findings that cooperative learning strategies, particularly TGT, enhance student motivation by creating enjoyable and meaningful learning experiences (Slavin, 2014; Johnson et al., 2014).

Therefore, the findings of this research provide important implications for science teachers in Islamic elementary schools. Teachers are encouraged to implement cooperative learning models such as TGT to create a more interactive learning environment that enhances motivation. Future research may expand this study by exploring the long-term effects of TGT on academic achievement and by implementing the model in different educational settings to strengthen generalizability.

Conclusion

This classroom action research concludes that the implementation of the Teams Games Tournament (TGT) cooperative learning model is effective in increasing students' learning motivation in science learning at MIN 1 Nagan Raya. The improvement was clearly demonstrated through consistent increases in motivation scores from the pre-cycle stage (61.42%, low category) to Cycle I (74.18%, moderate category) and Cycle II (87.36%, high category), supported by questionnaire results that rose from 63.10% in Cycle I to 88.20% in Cycle II. The TGT model successfully created an engaging and enjoyable learning atmosphere through structured teamwork, educational games, and tournament-based competition, which enhanced students' attention, participation, enthusiasm, persistence, cooperation, and responsibility. These findings indicate that TGT not only strengthens students' intrinsic and extrinsic motivation but also promotes active learning and collaborative skills, making it a highly recommended instructional strategy for improving the quality of science learning in Islamic elementary school contexts.

References

Al-Attas, S. M. N. (1993). *Islam and secularism*. International Institute of Islamic Thought and Civilization (ISTAC).

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. The George Washington University.

Brophy, J. (2010). *Motivating students to learn* (3rd ed.). Routledge.

Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. NSTA Press.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Darling-Hammond, L. (2017). *Teaching in the flat world: Learning from high-performing systems*. Teachers College Press.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne, 49*(3), 182–185. https://doi.org/10.1037/a0012801

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59–109. https://doi.org/10.3102/00346543074001059

Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. Palgrave Macmillan.

Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education, 41*(3), 39–54. https://doi.org/10.14221/ajte.2016v41n3.3

Glynn, S. M., Taasoobshirazi, G., & Brickman, P. (2011). Science motivation questionnaire: Construct validation with nonscience majors. *Journal of Research in Science Teaching, 48*(10), 1159–1176. https://doi.org/10.1002/tea.20442

Halstead, J. M. (2004). An Islamic concept of education. *Comparative Education, 40*(4), 517–529. https://doi.org/10.1080/0305006042000284510

Hamari, J., Koivisto, J., & Sarsa, H. (2016). Does gamification work? A literature review of empirical studies on gamification. In *Proceedings of the 47th Hawaii International Conference on System Sciences* (pp. 3025–3034). IEEE. https://doi.org/10.1109/HICSS.2014.377

Huda, M. (2017). *Model-model pengajaran dan pembelajaran: Isu-isu metodis dan paradigmatik*. Pustaka Pelajar.

Johnson, D. W., & Johnson, R. T. (2009). *An educational psychology success story: Social interdependence theory and cooperative learning*. Educational Researcher.

Johnson, D. W., Johnson, R. T., & Smith, K. A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. *Journal on Excellence in University Teaching, 25*(3–4), 85–118.

Kemmis, S., & McTaggart, R. (2014). *The action research planner: Doing critical participatory action research*. Springer.

Memon, N., & Alhashmi, S. (2018). Islamic pedagogy: Potential and perspective. *Intellectual Discourse, 26*(1), 45–68.

Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education, 30*(4), 159–167. https://doi.org/10.1152/advan.00053.2006

National Research Council. (2012). *A framework for K–12 science education: Practices, crosscutting concepts, and core ideas*. National Academies Press.

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*(4), 667–686. https://doi.org/10.1037/0022-0663.95.4.667

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology, 60*, 101832. https://doi.org/10.1016/j.cedpsych.2019.101832

Schunk, D. H., Meece, J. L., & Pintrich, P. R. (2014). *Motivation in education: Theory, research, and applications* (4th ed.). Pearson.

Slavin, R. E. (1995). *Cooperative learning: Theory, research, and practice* (2nd ed.). Allyn & Bacon.

Slavin, R. E. (2014). *Cooperative learning and academic achievement: Why does groupwork work?* Anales de Psicología.

Suryani, N., & Handayani, T. (2018). Students' perception toward science learning in Indonesian elementary schools. *Journal of Education and Learning, 12*(3), 453–461.

Tran, V. D. (2014). The effects of cooperative learning on the academic achievement and knowledge retention. *International Journal of Higher Education, 3*(2), 131–140. https://doi.org/10.5430/ijhe.v3n2p131

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Wang, M.-T., & Eccles, J. S. (2013). School context, achievement motivation, and academic engagement. *American Educational Research Journal, 50*(2), 331–366. https://doi.org/10.3102/0002831212471417

Widodo, A., & Duit, R. (2004). Konstruktivisme dan pembelajaran sains di Indonesia. *Jurnal Pendidikan dan Kebudayaan, 10*(50), 140–156.