

The Implementation of the Teams Games Tournament (TGT) Cooperative Learning Model to Improve Learning Outcomes in Physical Education and Health (PJOK) on the Relay Running Topic Among Students in Class X-5 at SMAN 1 Singaraja in the 2025/2026 Academic Year

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Abstract

This study aimed to improve students' learning outcomes in Physical Education, Sports, and Health (PJOK) learning on relay running material through the implementation of the Teams Games Tournament (TGT) cooperative learning model. This research used a Classroom Action Research (CAR) design conducted in two cycles consisting of planning, action, observation, and reflection stages. The subjects of this study were 34 students. Data were collected through learning outcome tests and observation sheets. The data were analyzed using descriptive quantitative analysis. The results showed that the implementation of the TGT learning model improved students' learning outcomes. This improvement was indicated by the increase in the average score from 70.49 in Cycle I to 86.37 in Cycle II, as well as the increase in classical learning completeness from 44.12% to 94.12%. Based on these findings, it can be concluded that the Teams Games Tournament (TGT) cooperative learning model is effective in improving students' learning outcomes in PJOK learning, particularly in relay running material.

Keywords: teams games tournament; learning outcomes; physical education; relay running; cooperative learning

1. Introduction

Education plays an important role in improving the quality of human resources through effective and meaningful learning processes. One of the important components in the school education system is Physical Education, Sports, and Health (PJOK). PJOK learning is not only aimed at improving students' physical fitness but also at developing motor skills, thinking abilities, and social values such as cooperation, discipline, and sportsmanship. Therefore, the PJOK learning process needs to be designed using approaches that actively engage students both physically and mentally.

However, in practice, PJOK learning in schools is often still teacher-centered, using demonstration and repetitive drill methods. This approach tends to make students less actively involved in the learning process, which impacts low motivation and learning outcomes. This condition also occurs in athletics learning, particularly in relay running, which requires mastery of basic techniques as well as coordination and teamwork. If the learning process is not designed to be engaging and participatory, students will experience difficulties in understanding techniques and applying effective teamwork.

Based on the results of preliminary observations conducted in class X-5 of SMA Negeri 1 Singaraja, it was found that students' learning outcomes in relay running material were still not optimal. The average learning scores were still below the minimum learning mastery criteria set by the school, and some students showed low levels of participation and motivation during the learning process. In addition, the learning process, which was still dominated by conventional methods, resulted in underdeveloped interaction and collaboration among students. This condition indicates the need for innovation in the use of more interactive learning models that can enhance student engagement.

One alternative learning model that can be used to address these problems is the cooperative learning model of the Teams Games Tournament (TGT) type. The TGT model is a type of cooperative learning that combines group learning activities with games and academic tournaments. In this model, students work collaboratively in small heterogeneous groups to understand the material and then participate in games or tournaments designed to assess their understanding. Through this process, students not only learn to understand the material but also develop social skills, teamwork, and a healthy competitive spirit.

Previous studies have shown that the implementation of the TGT cooperative learning model has a positive effect on students' learning outcomes. A study conducted by Tolla and Ali (2017) found that the use of the TGT model significantly improved students' learning motivation and outcomes in classroom learning. In addition, Luo et al. (2020) found that the implementation of the TGT model in physical education learning enhanced students' motivation and motor skills because the learning process became more active and enjoyable. Other studies have also shown that the TGT model is effective in increasing student engagement and learning outcomes through structured group interaction and competition.

In the context of PJOK learning, the TGT model is considered relevant because it aligns with the principles of sports learning, namely physical activity, teamwork, and a competitive yet enjoyable learning environment. In relay running material, for example, students are not only required to master basic techniques such as starting, running technique, baton exchange, and finishing techniques but also must be able to collaborate effectively with team members. Therefore, the use of the TGT cooperative learning model is expected to help students better understand the concepts and techniques of relay running while also increasing their participation and learning motivation.

Based on the above explanation, this study aims to analyze the implementation of the Teams Games Tournament (TGT) cooperative learning model in improving PJOK learning outcomes in athletics material, particularly relay running, among students of class X-5 at SMA Negeri 1 Singaraja in the 2025/2026 academic year. The results of this study are expected to contribute to the development of more innovative and effective learning strategies in PJOK learning in schools.

2. Method

This study employed a Classroom Action Research (CAR) method aimed at improving the learning process and outcomes through the implementation of the Teams Games Tournament (TGT) cooperative learning model in PJOK learning. Classroom Action Research is a systematic research

approach conducted by teachers in their own classrooms to enhance the quality of learning through specific actions carried out repeatedly in several cycles (Casey & Dyson, 2009; Nofriansyah & Ahman, 2025). This research was conducted at SMA Negeri 1 Singaraja with students of class X-5 in the 2025/2026 academic year. The subjects of this study were all 34 students in class X-5, consisting of both male and female students. The object of the study was PJOK learning outcomes in athletics, specifically relay running, through the implementation of the Teams Games Tournament (TGT) cooperative learning model. The classroom action research design in this study referred to the Kemmis and McTaggart model, which consists of four main stages in each cycle: planning, action, observation, and reflection. This study was conducted in two cycles, with each cycle consisting of several learning sessions. The reflection results from the first cycle were used as a basis for improving the implementation of actions in the next cycle (Hidayah & Sari, 2020).

At the planning stage, the researcher prepared learning instruments, including teaching modules, lesson plans, student activity observation sheets, and learning outcome assessment instruments. In addition, the researcher designed learning scenarios using the Teams Games Tournament (TGT) cooperative learning model adapted to the relay running material. The action stage involved implementing the previously prepared learning plan using the TGT model. In this model, students were divided into several heterogeneous groups. The learning process included material presentation, group discussions, games or academic competitions, and inter-group tournaments to assess students' understanding and skills. The observation stage was carried out during the learning process to monitor student activities, engagement, and the implementation of the TGT learning model. Observations were conducted using observation sheets prepared by the researcher, with the assistance of a collaborating teacher. The reflection stage was conducted to evaluate the results of the action in each cycle. The results of the reflection were used to identify strengths and weaknesses during the learning process and to determine improvements to be implemented in the next cycle so that learning objectives could be achieved optimally.

Data collection techniques in this study included observation, learning outcome tests, and documentation. Observation was used to monitor student activities during the learning process. Tests were used to measure students' learning outcomes in relay running material, while documentation was used to support the research data in the form of photos of learning activities and students' score records. The data analysis technique used in this study was descriptive quantitative analysis. Students' learning outcome data were analyzed by calculating the class average score and the percentage of learning mastery. Learning mastery was determined based on the Minimum Learning Achievement Criteria (KKTP) set by the school. The learning process was considered successful if at least 85% of students achieved scores above the predetermined KKTP.

3. Result

This study was conducted on 34 students of class X-5 at SMA Negeri 1 Singaraja through two learning cycles using the Teams Games Tournament (TGT) model. The assessment of learning outcomes was carried out through three aspects: cognitive, psychomotor, and affective. The research results were analyzed based on the average scores and classical learning mastery.

The implementation of Cycle I showed an improvement compared to the initial condition; however, students' learning outcomes had not yet reached the predetermined success indicators.

The class average score was still below the Minimum Learning Achievement Criteria (KKTP) of 75, and classical learning mastery had not yet met the required standard.

Table 1. Analysis of PJOK learning outcomes in cycle I

Assessment aspect	Average
Cognitive	67.35
Psychomotor	74.85
Affective	69.26
Overall Average	70.49

Based on Table 1, the average learning outcome in Cycle I was 70.49, which was still below the minimum mastery criterion of 75. Furthermore, classical learning mastery was analyzed as follows.

Table 2. Students' learning mastery in cycle I

Assessment aspect	Number of students	Percentage
Mastery	15	44.12%
Non-Mastery	19	55.88%
Total	34	100%

Based on Table 2, 15 students (44.12%) achieved learning mastery, while 19 students (55.88%) had not yet achieved mastery. Therefore, classical mastery in Cycle I did not meet the success indicator, which required at least 80% of students to achieve mastery.

After improvements were made in Cycle II through the optimization of the Teams Games Tournament (TGT) model, students' learning outcomes showed significant improvement.

Table 3. Analysis of PJOK learning outcomes in cycle II

Assessment aspect	Average
Cognitive	83.97
Psychomotor	89.26
Affective	85.88
Overall Average	86.37

Based on Table 3, the average learning outcome in Cycle II increased to 86.37, which exceeded the KKTP (75). The analysis of classical learning mastery in Cycle II is presented below.

Table 4. Students' learning mastery in cycle II

Assessment aspect	Number of students	Percentage
Mastery	32	94.12%
Non-Mastery	2	5.88%
Total	34	100%

Based on Table 4, 32 students (94.12%) achieved learning mastery, while 2 students (5.88%) had not yet achieved mastery. Thus, classical mastery in Cycle II exceeded the success indicator of $\geq 80\%$.

To examine the improvement in students' learning outcomes after implementing the TGT model, a comparison between Cycle I and Cycle II was conducted.

Table 5. Comparison of learning outcomes in cycle I and cycle II

Aspect	Cycle I	Cycle II	Improvement
Cognitive	67.35	83.97	16.62
Psychomotor	74.85	89.26	14.41
Affective	69.26	85.88	16.62
Overall Average	70.49	86.37	15.88
Classical Mastery	44.12%	94.12%	50%

Based on Table 5, all assessment aspects improved in Cycle II. The average learning outcome increased by 15.88 points, while classical mastery increased from 44.12% to 94.12%.

In addition, the N-Gain analysis result was 0.54, which falls into the moderate category, indicating that the implementation of the Teams Games Tournament (TGT) learning model was moderately effective in improving students' learning outcomes in relay running material.

4. Discussion

The results of the study indicate that the implementation of the Teams Games Tournament (TGT) cooperative learning model can improve students' learning outcomes in PJOK, particularly in relay running material. This improvement is reflected in the increase in the average learning score from 70.49 in Cycle I to 86.37 in Cycle II, as well as the increase in classical mastery from 44.12% to 94.12%. These findings demonstrate that the implementation of the TGT model has a positive impact on both the learning process and outcomes. The improvement in learning outcomes in Cycle II occurred because the Teams Games Tournament (TGT) model provides students with opportunities to learn actively through group collaboration, games, and structured competition. In this model, students do not merely receive material from the teacher but are also actively involved in group discussions, problem-solving, and academic games related to the learning material. This condition makes the learning process more engaging and increases student participation during the learning activities.

The findings of this study are consistent with the research conducted by Luo et al. (2020), which found that the implementation of the TGT model in physical education can enhance students' learning motivation and motor skills, as the learning process becomes more active and enjoyable. In the context of physical education, the elements of games and competition in the TGT model align well with the characteristics of sports learning, which emphasize physical activity, teamwork, and sportsmanship. Furthermore, the improvement in learning outcomes in this study is supported by research conducted by Riyanti et al. (2024), which states that the TGT learning model can increase students' motivation and learning outcomes by providing opportunities for each group member to actively participate in the learning process. Through the tournament system in the TGT model, students become more motivated to understand the material because they feel responsible for their group's success. In learning relay running material, the TGT model also helps students better understand the concept of teamwork. Relay running is a sport that requires coordination,

cooperation, and communication among team members, especially during baton exchanges. Through group discussions and game-based activities in the TGT model, students can practice teamwork and support each other in understanding basic techniques such as starting techniques, running techniques, and baton exchange techniques. As a result, students' psychomotor skills improved in Cycle II.

The results of this study are also in line with research by Saripudin and Saptani (2025), which shows that the implementation of the TGT model in physical education can enhance students' self-confidence, teamwork, and engagement during the learning process. The inclusion of games and tournament elements makes students more enthusiastic and motivated to actively participate in learning activities. Overall, the improvement in learning outcomes in this study indicates that the Teams Games Tournament (TGT) cooperative learning model is effective for use in PJOK learning. This model is able to create a more interactive and enjoyable learning environment while encouraging students to actively engage in the learning process. Therefore, the implementation of the TGT model can serve as an alternative instructional strategy for PJOK teachers to improve students' learning outcomes, particularly in athletics material such as relay running

5. Conclusion and Recommendation

Based on the results of the study, it can be concluded that the implementation of the Teams Games Tournament (TGT) cooperative learning model can improve students' learning outcomes in PJOK learning, particularly in relay running material. This is evidenced by the increase in the average learning score from 70.49 in Cycle I to 86.37 in Cycle II, as well as the improvement in classical learning mastery from 44.12% to 94.12% out of a total of 34 students. The implementation of the TGT learning model is able to create a more active, enjoyable, and engaging learning environment by directly involving students through group collaboration, games, and tournament activities. These conditions encourage students to be more motivated in participating in the learning process and improve their understanding of basic techniques in relay running. Thus, the Teams Games Tournament (TGT) learning model can be used as an effective alternative instructional strategy to improve students' learning outcomes in PJOK learning.

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References

Annetta, L. A. (2010). The "Ts" have it: A framework for serious educational game design. *Review of General Psychology*, 14(2), 105–112. <https://doi.org/10.1037/a0018985>

- Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools. *Bulletin of Physical Education*, 18(1), 5–8.
- Camacho-Sánchez, M., & Manzano-León, A. (2023). Game-based learning in physical education: A systematic review. *Sustainability*, 15(4), 1–15. <https://doi.org/10.3390/su15043219>
- Casey, A., & Dyson, B. (2009). *Cooperative learning in physical education*. Routledge.
- Cheng, M. T., She, H. C., & Annetta, L. A. (2015). Game-based learning and student motivation: A meta-analysis. *Computers & Education*, 88, 37–48. <https://doi.org/10.1016/j.compedu.2015.04.009>
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. *Proceedings of the 15th International Academic MindTrek Conference*, 9–15. <https://doi.org/10.1145/2181037.2181040>
- Dyson, B., Griffin, L. L., & Hastie, P. (2004). Sport education, tactical games, and cooperative learning. *Quest*, 56(2), 226–240. <https://doi.org/10.1080/00336297.2004.10491823>
- Ennis, C. D. (2017). Educating students for a lifetime of physical activity. *Research Quarterly for Exercise and Sport*, 88(3), 241–250. <https://doi.org/10.1080/02701367.2017.1342495>
- Gallahue, D. L., & Ozmun, J. C. (2012). *Understanding motor development* (7th ed.). McGraw-Hill.
- Hastie, P. A., & Casey, A. (2014). Fidelity in models-based practice research. *Journal of Teaching in Physical Education*, 33(3), 422–431. <https://doi.org/10.1123/jtpe.2013-0140>
- Hidayah, N., & Sari, M. (2020). Classroom action research in improving learning outcomes. *Journal of Educational Research*, 5(2), 88–95.
- Kirk, D. (2010). *Physical education futures*. Routledge. <https://doi.org/10.4324/9780203874622>
- Luo, Y., Wang, J., & Liu, H. (2020). The effect of cooperative learning on physical education outcomes. *International Journal of Environmental Research and Public Health*, 17(3), 1–12. <https://doi.org/10.3390/ijerph17030912>
- Metzler, M. W. (2017). *Instructional models in physical education* (3rd ed.). Routledge.
- Nofriansyah, D., & Ahman. (2025). Classroom action research in education improvement. *Journal of Educational Innovation*, 10(1), 45–53.
- Prensky, M. (2001). *Digital game-based learning*. McGraw-Hill.
- Riyanti, D., Pratama, R., & Saputra, H. (2024). The effectiveness of TGT model in improving student learning outcomes. *Journal of Education and Learning*, 12(1), 55–63.
- Saripudin, A., & Saptani, E. (2025). Cooperative learning model TGT in physical education. *Indonesian Journal of Sport Education*, 7(1), 22–30.
- Siedentop, D. (1994). *Sport education: Quality PE through positive sport experiences*. Human Kinetics.
- Slavin, R. E. (1995). *Cooperative learning: Theory, research, and practice*. Allyn & Bacon.
- Stringer, E. T. (2014). *Action research* (4th ed.). Sage Publications.
- Sugiyono. (2019). *Metode penelitian pendidikan*. Alfabeta.
- Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.
- Wang, A. I., & Tahir, R. (2020). The effect of game-based learning tools on learning. *Computers & Education*, 149, 103818. <https://doi.org/10.1016/j.compedu.2020.103818>
- Zainuddin, Z., & Halili, S. H. (2016). Flipped classroom research and trends. *Educational Technology & Society*, 19(3), 313–324.