



The effect of teams games tournament (TGT) cooperative learning model toward the improvement of football learning outcome El efecto del modelo de aprendizaje cooperativo de torneos de juegos por equipos (TGT) para la mejora de los resultados del aprendizaje en el fútbol

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Abstract

Introduction: football is a compulsory subject in schools, so the right learning model is needed to be able to improve students' skills.

This study aims to identify the effect of the Teams Games Tournament (TGT) learning model on improving football learning outcomes.

Method: The researcher conducted an experimental method in 16 meetings three times a week. The research involved 80 samples of students between the ages of 15-17 years. The research instrument utilized the Yeagley Football Battery.

The statistical analysis utilized the Two Related Samples t-test analysis technique at the significance level $\alpha = 0.05$.

Result: In the pre-test and post-test data, the group that used the Teams Games Tournament learning revealed a significance value of 0,000 since the significance of the pre-test and post-test data in the group using the Teams Games Tournament was < 0.05 .

Conclusion: It can be concluded that the Teams Games Tournament (TGT) learning model has an effect on improving soccer learning outcomes in the aspect of basic technical skills.

Keywords

Learning model; cooperative; teams games tournament (tgt); football learning outcomes; basic technical skills.

Resumen

Introducción: el fútbol es una asignatura obligatoria en las escuelas, por lo que se necesita un modelo de aprendizaje adecuado para poder mejorar las habilidades de los alumnos.

Este estudio pretende identificar el efecto del modelo de aprendizaje del Torneo de Juegos de Equipos en la mejora de los resultados del aprendizaje del fútbol.

Método: El investigador llevó a cabo un método experimental en 16 reuniones tres veces por semana. En la investigación participaron 80 muestras de estudiantes con edades comprendidas entre los 15 y los 17 años.

El instrumento de investigación utilizado fue la Batería de Fútbol Yeagley. El análisis estadístico utilizó la técnica de análisis de la prueba t de dos muestras relacionadas al nivel de significación $\alpha = 0,05$.

Resultados: En los datos pre-test y post-test, el grupo que utilizó el aprendizaje del Torneo de Juegos de Equipos reveló un valor de significación de 0,000 ya que la significación de los datos pre-test y post-test en el grupo que utilizó el Torneo de Juegos de Equipos fue $< 0,05$.

Conclusiones: Se puede concluir que el modelo de aprendizaje Torneo de Juegos de Equipos tiene un efecto en la mejora de los resultados del aprendizaje del fútbol en el aspecto de las habilidades técnicas básicas.

Palabras clave

Modelo de aprendizaje; torneo cooperativo; de juegos en equipo; resultados del aprendizaje del fútbol; habilidades técnicas básicas.

Introduction

Football is a top-rated sport for all genders, religions, and ethnicities. This sport is an increasingly popular mass phenomenon. According to the International Federation of Football Associations (FIFA), around 270 million people actively play this sport in its 211 member countries, representing around 4% of the total population (Coto-Lousas & Fernández-Río, 2024). This figure is a rough estimate of the games that can be identified. The actual number was estimated to exceed this calculation. In many countries, including Indonesia, football is a compulsory material in curriculum at various school levels (Hadiana et al., 2023; Nurcahyo et al., 2021). Football has an essential position in the physical education curriculum in schools. Football learning material is vital in the physical education curriculum in schools (Bramley et al., 2012; Deshpande et al., 2017; Harvey et al., 2010).

Football is one of the mandatory materials that students must accept when learning physical education (Sucipto et al., 2019). The practice of football has received high attention due to the high intensity of this sport being played in addition to being able to improve health, as has been proposed by WHO (Hadiana et al., 2023; Nurcahyo et al., 2021; Qohhar & Pazriansyah, 2019).

Infrastructure and human resource readiness can influence the determining factor of football success. The adequate property will be equivalent to achievement (Wicaksono et al., 2022; Widiastuti, 2019). In addition to infrastructure factors, student readiness also affects achievement. Teachers should prepare the student's readiness before and during playing football, physical readiness, physical condition, and mentality to pursue the effectiveness of the learning (Nurcahyo et al., 2025; Syafi'i & Setiawan, 2019; Taufik, 2018). In implementing the physical education learning process in schools, the students sidelined the circumstances and physical education. They are more active in participating in other academic matters due to interrelated factors: limited educational creativity and a need for more knowledge of the importance of learning football.

The ability of students to master football can support their performance in football games individually and collectively (Nurcahyo et al., 2021). The results of direct observations by researchers show that many high school students still cannot master essential techniques in football. However, more than basic techniques are required to support the game of football; students must also understand the game strategy and tactics of football. The game of football emphasizes awareness of tactics to encourage students to solve all problems during the game or match.

Students should master technical skills and be supported by a tough mentality (Suherman, 2009). Football has objectives in several aspects: a) Physical development. This goal is related to the ability to perform activities that involve physical strengths from various organs of a person's body (physical fitness); b) Development of motion. This goal is related to the ability to move effectively, efficiently, smoothly, beautifully, and ideally (skillful); c) Mental development. This goal is associated with the ability to think and interpret the overall knowledge of physical education into the environment to develop student knowledge, attitudes, and responsibilities and d) Social development. This goal is related to the student's ability to adapt to a group or society.

It could be stated that football players have effective techniques if they master at least four goals (Budi et al., 2019; Nur et al., 2021). Sports teachers try to make students master football playing techniques by developing various fancy and current methods (Agustan & Hidayat, 2021). Some of the methods offered include cooperative learning models, including the Jigsaw type, the Think Pair Share (TPS) type, the Numbered Head Together (NHT) type, and the Teams Games Tournament (TGT) type. A cooperative learning model is suggested for students to achieve physical education through football learning (Metzler, 2000; Nur et al., 2021).

The cooperative learning model is a set of teaching strategies that share crucial attributes. The most crucial step is to group students into learning teams for set amounts of time or assignments so that all students will contribute to the learning process and outcomes. Cooperative learning refers to teaching methods in which students study in small groups to help each other learn the subject matter (Bermejo Díaz et al., 2021; Sánchez-Hernández et al., 2018; Slavin, 2005). Cooperative learning provides opportunities for students to work together with fellow students in structured tasks.

Regarding group arrangements in the cooperative learning model, Lie (2010) stated that heterogeneity grouping (diversity) is a prominent feature of the cooperative learning method. Heterogeneity groups



are initiated by considering the diversity of gender, religious, socio-economic, and ethnic backgrounds and academic abilities. The cooperative learning group usually consists of one person with high academic ability, two people with moderate ability, and one other from the low academic ability group (Carbonero Sánchez et al., 2022).

The cooperative learning model is a learning model that divides students into small groups consisting of various backgrounds such as gender, religion, socio-economic, ethnicity, and academic ability to work. The identical is valid for helping each other in the process and learning outcomes. The cooperative learning model in football is realized through Teams Games Tournament (TGT). TGT consists of regular cycles of teaching activities: Teaching, Team Learning, Tournaments, and Team Recognition (Rubiyatno et al., 2023; Slavin, 2005). Lie (2010) stated that the elements of the TGT type of cooperative learning are as follows: a) Positive interdependence, b) Individual responsibility, c) Face-to-face, d) Communication between members, and e) Evaluation of group processes.

The cooperative learning model is developed to achieve three crucial learning objectives: academic achievement, acceptance of existing diversity or differences, and developing social skills (Setiawan et al., 2020). The TGT model stimulates students to actively participate, be motivated, and be stimulated to be competent in achieving the learning tasks assigned in groups (Luo et al., 2020). After all, the students enjoy the game (Artha et al., 2020; Slavin, 2005).

Through TGT learning, students have more opportunities to utilize the knowledge and skills in their group comprehensively. They could carry out learning activities to solve problems given to their groups and encourage their potential to carry out learning activities at a higher level of thinking. The formation of student intelligence will affect the achievement of student learning outcomes, which increases in playing football. This study aims to examine the impact of TGT on improving performance in football. This study intends to confirm and affirm the results of previous studies in research settings in developing countries.

Method

The aims and objectives of this study were to reveal the effect of the TGT cooperative learning model on improving student football learning outcomes. The research method utilized in this study used experimental methods. The researcher provided treatment by applying the TGT learning model to high school students to examine the improvement in their football learning outcomes. The design used in this study was a one-group pre-test post-test design.

Participants

The participants of the research consist of 80 students between the ages of 15-17 years. The sampling technique used by researchers is a simple random sampling technique. This random technique is accomplished by raffle.

Procedure

The test utilized the Yeagle Football Battery instrument to measure increased football learning outcomes (Jackson & Baumgartner, 1995). The Yeagle Football Battery aims to measure beginners' basic football skills. The Yeagle football battery's purpose is to measure novice players' basic football skills. This instrument also has validity and reliability that has been tested by two different criteria: (1) the assessment of four referees on juggling skills, and (2) the combined standard score of the four tests. More details regarding the coefficient of concurrent validity are as follows:

Table 1. The criteria for testing the validity and reliability of the instrument football battery Yeagley

No.		Judges' Ratings	Composite Standard Score
1	Dribble	66	80
2	Wall volley	54	81
3	Juggling	69	74
4	Heading	38	61



Statistical Analysis

The data from the measurement results then processed and analyzed statistically utilizing Statistical Product for Service Solutions (SPSS) software version 20. The learning outcomes data of basic football skills and the Z-Score and t-Score conversions are carried out before statistical tests are carried out to compare the two distributions—different scores. The normality test used in this study is the Shapiro-Wilk Test, with a significance level of 5% or 0.05. The homogeneity test used in this study is the Levane Statistic Test, with a significance level of 5% or 0.05. Statistical techniques to determine the effect of each variable using the paired sample t-test (Paired Sample t-test).

Results

Description of Data

The following data describes the t-score for acquiring football skills using the TGT learning model.

Table 2. Data Description t-Score Basic Technique Skills in Football

		Pre-test	Post-test	Gain
Model Group of TGT Learning	N	80	80	80
	\bar{X}	83,38	116,62	33,23
	SD	2,13	7,63	6,73

Based on Table 2, the t-score for basic football technical skills in the TGT learning model group in the pre-test has a mean of 83.38 and a standard deviation of 2.13. In contrast, the post-test has a mean of 116.62 and a standard deviation of 7.63, while the gain has a mean of 33.23 and a standard deviation of 6.73.

Normality Test

The sample criteria were normally distributed if the P-value was > 0.05. Data from the analysis of the normality test can be seen in Table 3.

Table 3. Normality Test

No.	Group	N	Asym. Sig (p-value)	Note
1	Pre-test Group TGT	80	0.002	Not Normal
3	Post-test Group TGT	80	0.056	Normal

Based on the results of the normality analysis test in Table 3 above, it is stated that there are pre-test data with a P-value < 0.05, so the data is declared abnormal. Thus, hypothesis testing is carried out using the nonparametric test.

Homogeneity Test

Calculating the homogeneity test in this study uses SPSS version 16. This requirement relates to the similarity of the combined variance of learning outcomes in the TGT learning model group. The homogeneity test criteria are met if the P-value > 0.05. The results can be seen in Table 4.

Table 4. Homogeneity Test

No.	Group	N	Asym. Sig (p-value)	Note
1	Pre-test Group TGT	80	0.941	Homogenous
3	Postest Group TGT	80	0.687	Homogenous

The table shows the results of a homogeneity test for two groups. The groups are labeled "Pre-test Group TGT" and "Post-test Group TGT". The table shows the number of participants in each group (N), the asymmetry significance (p-value), and the note. The homogeneity test is used to determine whether the two groups are significantly different from each other. The results of the test show that the two groups are not significantly different from each other. The asymmetry significance (p-value) for the Pre-test Group TGT is 0.941, and the asymmetry significance (p-value) for the post-test group TGT is 0.687. Both of these p-values are greater than 0.05, which means that the groups are not significantly different from

each other. The note for both groups is "Homogenous". It means that the groups are homogenous or similar.

Hypothesis Testing

After testing the normality and homogeneity of the data, the next step is hypothesis testing. The test was carried out to produce conclusions from the research problem, test the data on the pre-test, and test the final results to determine the effect of group treatment. A nonparametric test was conducted using Two Related Sample Tests to determine the increase in football learning outcomes with the TGT learning model. The following table shows the analysis of the Two Related Sample tests on the results of learning football in the group that was given the TGT learning treatment:

Table 5 Analysis of the Two Related Tests on the Learning Outcomes of the TGT Group Football

	POST-TEST – PRE-TEST
Asymp. Sig. (2-tailed)	.000

It can be noticed in Table 5 that the value of the Two Related Sample tests on the pre-test and post-test data in the group using TGT learning shows a significance value of 0.000. Since the significance of the pre-test and post-test data in the group using TGT learning < 0.05 , there is an effect of giving the TGT learning model on football learning outcomes.

Discussion

The results show that the TGT type of cooperative learning significantly affects the increase in the score on the primary football technical skills test. This increase occurred because, during the learning process, students were actively involved in the game and motivated to be able to perform basic football techniques better. This result is strengthened based on direct observation during the research.

Group learning patterns employing cooperation between students can encourage the emergence of higher-quality ideas and increase student creativity; learning can also maintain social values (García-Taibo et al., 2024; Pamungkas et al., 2023). Their mutual dependence motivates them to be able to work harder for their success (Jaime et al., 2021). The football learning pattern with the TGT learning model introduces and implements a tournament system in each small group; students work together to improve their basic technical skills in football. They have to be able to win matches or tournaments at every learning (Sánchez-Hernández et al., 2018).

Based on the results of field observations, groups of students who can win tournaments or matches are highly motivated to participate in football learning through the TGT model. Each student in the group desires to continue to accomplish and display their best abilities to maintain achievement in the next tournament or match. Most students can improve their scores at the post-test. Previous studies also stated that the utilization of Cooperative Learning in physical education is reported can improve the achievement of learning in the physical, cognitive, social, and affective domains (Casey & Goodyear, 2015; Darnis & Lafont, 2015; Hasmyati & Suwardi, 2018)

In addition, with the learning pattern of the tournament in groups, the lost group at the previous tournament showed better motivation at the following learning meeting. They are more enthusiastic about carrying out various formations and forms of learning to improve basic techniques in football. This enthusiasm increases their abilities and helps them get a better score at post-test basic techniques in football games. In another case, cooperative learning is also effective in several sports, such as Basketball (Afif et al., 2022) and Futsal (Shalihah et al., 2024). The effectiveness of physical education learning for 12 weeks is packaged through the ninth-grade cooperative learning model. Other research results show that the TGT cooperative learning model has participated in the learning outcomes of the new long jump style (Aslan et al., 2020).

Based on the explanation above, the results of this study have been strengthened by the research results revealed (Aslan et al., 2020). The TGT type of cooperative learning effectively improves the essential technical skills of football in high school students. The Teams Games Tournament (TGT) cooperative



learning model has significantly enhanced learning outcomes in various educational contexts, including physical education and football. This model promotes collaborative engagement among students, fostering an environment where they can learn from one another while developing essential skills such as teamwork, communication, and strategic thinking (Syafi'i & Setiawan, 2019; Taufik, 2018). In the context of football, the TGT model encourages students to participate in structured team-based activities that improve their technical skills and enhance their understanding of game strategies and tactics. By working in teams, students are motivated to support each other, leading to a more inclusive learning atmosphere where individual strengths can be leveraged for collective success. This cooperative approach has been linked to increased student motivation and a deeper comprehension of the game, ultimately resulting in improved performance on the field (Sánchez-Hernández et al., 2018).

Furthermore, the TGT model facilitates a competitive yet supportive environment that can lead to higher levels of engagement and retention of knowledge. As students participate in tournaments, they are exposed to real-game scenarios that require them to apply their skills in practical situations. This experiential learning process is crucial for developing technical abilities and cognitive skills such as decision-making and problem-solving. Positive peer reinforcement during these tournaments can enhance self-efficacy and encourage a growth mindset among learners. Consequently, implementing the TGT cooperative learning model in football education can significantly improve learning outcomes, equipping students with both the physical and mental tools necessary for success in the sport (Jaime et al., 2021).

It is essential to highlight the multifaceted benefits that this pedagogical approach offers. The findings indicate that the TGT model enhances students' technical skills in football and fosters a deeper understanding of game dynamics and strategies. By engaging in cooperative learning, students are encouraged to collaborate, communicate, and support one another, cultivating a sense of community and shared responsibility for learning. This collaborative environment is particularly beneficial in sports like football, where teamwork is paramount. The structured nature of the TGT model, which incorporates competitive elements through tournaments, motivates students, increasing their engagement and commitment to practice. As a result, students demonstrate improved performance metrics, including skill execution, tactical awareness, and overall game comprehension.

Moreover, the TGT model's emphasis on peer interaction and feedback is critical in enhancing learning outcomes. The social constructivist framework underlying TGT posits that knowledge is constructed through social interactions, and this is particularly evident in the context of football training (Metzler 2000). Students learn from their instructors and peers, which can lead to a more profound and lasting understanding of the sport. The competitive aspect of the tournaments encourages students to apply their skills in real-time scenarios, reinforcing their learning through practical application (Syafi'i & Setiawan, 2019; Taufik, 2018). Additionally, positive reinforcement from teammates can bolster self-esteem and motivation, further contributing to individual and collective improvement. Overall, implementing the TGT cooperative learning model in football education demonstrates significant potential for enhancing both the cognitive and physical aspects of learning, ultimately leading to superior educational outcomes in sports.

Conclusions

Based on the research data analyzed and discussed in the previous chapter, it is concluded that the TGT learning model significantly improves learning outcomes in football games. For further research, it is recommended that it be developed through the study or use of different dependent variables such as playing skills, physical fitness, and attitude variables. In addition, further research can be conducted on variable attributes such as motor skills, gender, and age group or apply them at higher levels of education.

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