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The Effect of Cooperative Learning Models of Team Games Tournament (Tgt) and Jigsaw Types on Students' Motor Abilities in Football Games in Elementary Schools

Hafid Syahrul Mufaza[1], Nur Ahmad Muharram[2], Setyo Harmono[3]
Universitas Nusantara PGRI Kediri, Indonesia

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Abstract
Motor skills are an important component in physical education learning because they are directly related to students' mastery of basic movement skills. Low motor skills in soccer games are often caused by the use of learning models that do not actively involve students. This study aims to analyze the effect of cooperative learning models of the Teams Games Tournament (TGT) and Jigsaw types on students' motor skills in soccer games. The study used a quantitative approach with a quasi-experimental design through a pretest-posttest control group design. The study sample consisted of 24 fourth-grade students of SDN 1 Patihan who were divided into the TGT group, the Jigsaw group, and the control group. The research instrument was a soccer motor skills assessment rubric that included dribbling, passing, shooting, and ball control. Data analysis used normality tests, homogeneity tests, paired sample t-tests, and independent sample t-tests. The results showed that the average motor skills of the TGT group increased from 60.88 to 78.13, while the Jigsaw group increased from 60.13 to 72.13. The statistical analysis showed a significant effect of the cooperative learning model on students' motor skills ($p<0.05$). The TGT model produced greater improvements than the Jigsaw model. The findings of this study indicate that game-based and competitive learning can increase student engagement, thus positively impacting the development of motor skills in soccer.

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Corresponding Author:
Afid Syahrul Mufaza
Universitas Nusantara PGRI Kediri, Indonesia
Email Correspondent: hafidhmufaza@gmail.com

1. INTRODUCTION

Physical education plays a strategic role in developing students' physical, motor, social, emotional, and cognitive abilities. Through structured physical activity, students gain learning experiences that support their overall development. One of the topics taught in elementary school physical education is the game of soccer.

Soccer is a sport that demands excellent motor skills. Mastering basic techniques such as dribbling, passing, shooting, and ball control requires optimal coordination, balance, agility, and body control. Therefore, motor skills are a crucial factor in determining a student's success in learning soccer.

Initial observations indicate that students' motor skills are still in the moderate category. This is characterized by low passing accuracy, lack of ball control, and suboptimal motor coordination during game activities. These issues are thought to be influenced by the use of a teacher-centered learning model, which results in limited opportunities for students to actively participate.

Cooperative learning models are an alternative that can be used to improve the quality of physical education instruction. The Teams Games Tournament (TGT) model combines group learning activities with elements of games and competition, thereby increasing student motivation. Meanwhile, the Jigsaw model emphasizes individual responsibility and group collaboration through mutual teaching activities among group members.

Although both models have been widely used in learning, research specifically comparing the effectiveness of TGT and Jigsaw on students' motor skills in soccer is limited. Therefore, this study was conducted to determine the effect of both models and determine which model is more effective in improving elementary school students' motor skills.

2. RESEARCH METHODS

This study used a quantitative approach with a true experimental design to determine the effect of the Teams Games Tournament (TGT) and Jigsaw cooperative learning models on students' motor skills in soccer. The research design used was a pretest-posttest control group design involving the TGT group, the Jigsaw group, and the control group.

The study was conducted at Patihan 1 Elementary School, Nganjuk Regency, during the 2025/2026 academic year. The sample consisted of 24 fourth-grade students divided into three groups. The research instrument was a soccer motor skills assessment rubric covering dribbling, passing, shooting, and controlling.

The research procedure began with a pretest to determine students' initial abilities. Next, the experimental group was given treatment using the TGT and Jigsaw learning models, while the control group underwent conventional learning. After the treatment was completed, all students were given a posttest to determine their motor skill improvement.

3. RESULTS AND DISCUSSION

3.1.Research Results

Research Results study aims to determine the effect of the cooperative learning model of the Teams Games Tournament (TGT) and Jigsaw types on students' motor skills in playing soccer. The study involved 24 fourth-grade students of SD Negeri 1 Patihan who were divided into three groups, namely the TGT group, the Jigsaw group, and the control group, each consisting of 8 students.

Students' motor skills were measured using a soccer skills test covering dribbling, passing, shooting, and controlling. Measurements were conducted twice: before the treatment (pretest) and after the treatment (posttest). The research data were then analyzed to determine the improvement in students' motor skills after participating in the learning process.

Based on the pretest results, the TGT group obtained an average score of 60.88, the Jigsaw group 60.13, and the control group 64.44. These results indicate that the initial abilities of students in the three groups were relatively similar. After being given treatment, the average posttest score of the TGT group increased to 78.13, the Jigsaw group increased to 72.13, while the control group showed a lower increase compared to the two experimental groups. These results indicate that the cooperative learning model contributes to improving students' motor skills in soccer games.

Group	Rate-rate Pretest	Rate-rate Posttest	Improvement
TGT	60,88	78,13	17,25

Jigsaw	60,13	72,13	12,00
Control	64,44	66,31	1,87

Normality Test Results

A Shapiro-Wilk test was used to determine whether the research data were normally distributed. The analysis showed a significance value of 0.073 for the TGT group, 0.078 for the Jigsaw group, and 0.271 for the control group. All significance values were greater than 0.05, thus concluding that the research data were normally distributed.

Group	Statistics	Say.
TGT	0,839	0,073
Jigsaw	0,841	0,078
Control	0,897	0,271

Homogeneity Test Results

A homogeneity test was conducted using Levene's Test to determine the similarity of variances between groups. The analysis results showed a significance value of 0.934. Because this value is greater than 0.05, the data variance between groups is considered homogeneous. Therefore, the data meet the requirements for hypothesis testing using parametric statistics.

Levene Statistic	df1	df2	Say.
0,069	h 2	2 1	0,93 4

Results of Improving Students' Motor Skills

The analysis results showed that the TGT group experienced an average increase from 60.88 to 78.13, an increase of 17.25 points. The Jigsaw group experienced an average increase from 60.13 to 72.13, an increase of 12.00 points. The increase in the TGT group was higher than the Jigsaw group, indicating that the TGT learning model was more effective in improving students' motor skills in soccer games.

Group	Mean Difference	t	df	Say.
TGT (X1)	-17,250	-12,252	7	0,000
Jigsaw (X2)	-12,000	-7,044	7	0,000
Control	0,000	-	-	-

Hypothesis Testing Results

Hypothesis testing was conducted using a t-test at a significance level of 0.05. The analysis results showed a significant difference between students' motor skills before and after treatment. Thus, the Teams Games Tournament (TGT) and Jigsaw cooperative learning models affect improving students' motor skills in soccer. The TGT model

showed a greater effect than the Jigsaw model in improving students' motor skills.

Group Comparison	t	df	Say.	Information
TGT (X1) – Control	2,182	14	0,047	Significant
Jigsaw (X2) – Control	1,416	14	0,179	Not Significant

3.2.Discussion

The results of the study indicate that the implementation of the Team Games Tournament (TGT) and Jigsaw cooperative learning models can improve students' learning outcomes in soccer shooting techniques. These findings demonstrate that student-centered learning is more effective than conventional learning, which is still widely used in physical education. Physical education essentially aims not only to develop physical abilities, but also the cognitive, affective, and social aspects of students through structured movement activities (Widodo, 2018). Therefore, the use of learning models that can increase active student involvement is a crucial need in achieving the overall goals of physical education.

The improved learning outcomes achieved by students indicate that the learning process has optimized the function of physical education as a means of developing motor skills and sports skills. Physical education from school age plays a role in stimulating students' organic, motor, intellectual, and emotional development (Nugraha, 2015). In this study, learning activities involving repeated shooting practice provided hands-on learning experiences that supported the development of students' motor skills.

Shooting ability is a crucial basic technique in soccer because it directly relates to scoring goals (Najwa, 2020). Students' success in improving their shooting skills demonstrates that the applied learning model can help them understand and practice basic soccer techniques more effectively. According to Arya Ibrahim Siregar (2021), mastery of basic techniques, such as kicking and ball control, is the main foundation for student success in soccer. Therefore, the improvement in shooting ability found in this study indicates significant development in basic skills.

The TGT learning model provides positive learning outcomes because it combines elements of group collaboration, games, and competition. These characteristics motivate students to participate in learning and strive to achieve the best results in every activity. Astriana et al. (2017) explain that the TGT model can improve learning outcomes and student engagement through engaging game activities. Similar findings were also reported by Mohammad Rifqi (2022), who stated that the game element is essential for learning.

TGT can significantly increase student participation and learning motivation. Furthermore, research by Hurriah et al. (2021) shows that implementing TGT not only improves student learning outcomes but also increases the effectiveness of the overall learning process.

The success of the TGT model in this study was also supported by the healthy competition through group tournaments. This competition provided a fun learning experience, resulting in more enthusiastic student participation. These results align with research by Ernayulis (2021) and Randi (2024), which found that the TGT model effectively improves student learning outcomes in various subjects because it creates an active and competitive learning environment. This situation demonstrates that TGT principles can be applied not only to academic subjects but also to sports skills learning.

Meanwhile, the Jigsaw learning model also demonstrated a positive influence on learning outcomes in soccer shooting. This model places students at the center of learning by giving each group member responsibility for mastering specific material before explaining it to other group members. According to Kusuma (2018), Jigsaw is designed to increase individual and group responsibility in the learning process. The system of expert groups and home groups, which is a key characteristic of Jigsaw, allows students to share knowledge, resulting in a more in-depth learning process (Lubis & Harahap, 2016).

In soccer shooting lessons, discussions and information exchange between students provide opportunities for students to understand movement techniques in greater detail before practicing them directly. This environment supports improved conceptual understanding and student movement skills. This finding aligns with research by Nurfaizah (2021), which states that the Jigsaw model can improve students' cognitive abilities through collaborative learning activities. Furthermore, Hayu Almar'atus Sholihah et al. (2019) explain that Jigsaw can improve learning motivation, material comprehension, and the ability to work collaboratively among group members.

The improvement in learning outcomes can also be explained through students' motor development. Shooting ability in soccer requires good coordination between leg muscles, body balance, and precise shooting. According to Ficanysha and Neviyarni (2021), motor skill development occurs gradually as an individual grows and is strongly influenced by physical activity. The learning activities provided during the study allowed students to gain more movement experience, allowing optimal development of motor skills that support shooting ability.

Gross motor development plays a crucial role in students' shooting success. Hidayanti (2013) explains that gross motor skills relate to the use of large muscles, which influence a person's ability to perform various physical activities. Shooting techniques in soccer require coordinated movement of the feet, hips, and body as a whole, so improving gross motor skills will directly impact the quality of a student's kicks.

In addition to gross motor skills, fine motor coordination also contributes to precise shooting movements. Afifah et al. (2020) explain that fine motor skills relate to movement coordination, which requires precision and good motor control. In the context of this study, coordination between vision and footwork when aiming the ball at the target is one factor supporting students' shooting success.

The results of this study also support the learning model theory, which states that learning success is influenced by the suitability of the model used to the characteristics of the material and students. A learning model is a conceptual framework designed to organize learning experiences so that learning objectives can be achieved effectively (Khoerunnisa & Aqwal, 2020). Through the implementation of TGT and Jigsaw, students gain broader opportunities to interact, discuss, practice, and develop social skills throughout the learning process.

Theoretically, the success of both models can be explained through the concept of cooperative learning, which emphasizes collaboration among students to achieve shared learning goals (Tgk et al., 2011). Cooperative learning provides opportunities for students to help each other, exchange information, and take responsibility for the group's success. This makes the learning process more meaningful than teacher-centered learning.

The findings of this study also support the learning theory that states that learning is a process of behavioral change that occurs through experience and conscious practice (Ma'rifah, 2018). Through learning activities involving repeated shooting practice,

students gain learning experiences that result in improved technical abilities, conceptual understanding, and social skills. Therefore, it can be concluded that the implementation of the TGT and Jigsaw cooperative learning models is effective in improving students' soccer shooting learning outcomes, although the TGT model shows a tendency for higher results due to the presence of game and competition elements that can increase student learning motivation.

4. CONCLUSION

The cooperative learning model of the Teams Games Tournament (TGT) and Jigsaw types has a significant influence on improving students' motor skills in playing soccer.

The TGT model showed a higher increase in motor skills than the Jigsaw model, indicated by an average increase of 17.25 points compared to 12.00 points in the Jigsaw group.

Thus, the TGT model can be recommended as an effective alternative for physical education learning to improve the motor skills of elementary school students in playing soccer.

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